

# Commodore NETWORK

AUSTRALIA

April 1995

Vol 4 No 4

Supporting the Commodore range of 8 bit computers

*Inside.....*

## NEWSWATCH

**The Second part to  
our 1541  
diagnostics series**

**dieHard under the  
microscope**

**Interview with the  
creator of "Attack  
of the Mutant  
Camels"**

**Jeff Minter**

### COMMODORE LIQUIDATION

News from the States concerning Commodore's liquidation is not good. It appears that Commodore International is NOT to be resurrected, with the only interest shown in CBM being in the business name. There seems to be little interest in CBM's inventory, nor in the Amiga line, much less the Commodore 8-bits.

### HD-20 FROM CMD

CMD have recently announced the return of the HD-20 to their range at a price of just \$299.00 U.S. These drives apparently utilise mechanisms originally bound for use with Apple PowerBooks and are reported to run both faster and cooler than the original HD-20

### CARTRIDGE PORT EXPANDER

Also from CMD is a new cartridge port expansion module, allowing the insertion of three cartridges at one time. Each cartridge may be switched in/out of operation at any time (naturally, you can only have access to one at any given time!), and you can change the address at which the computer sees the cartridge. Price quoted is U.S. \$29.95

- Expanding Horizons
- Bits 'n' Pieces
- CP/M Corner
- Letters Link
- Micro-Mart
- Power Drift
- GeosGenie
- PMCC



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## Commodore NETWORK

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# Editorial

Our annual survey has once again attracted a good response from you, the reader. For those of you that haven't sent it back, please do so. It helps me plan C.N. to suit you, not to mention that it gives me many a good idea for future columns and articles for our pages.

At present, we've only had a return of about 17% of the total readership, but I've put together a "ladder" of the most-read columns in C.N. from this return. Here it is:

Letter's Link - 8.6  
Newswatch - 8.3  
Micro-Mart - 8.1  
Editorial - 8.0  
Maintenance Series - 7.8  
Bits & Pieces - 7.6  
GeosGenie - 7.4  
P.D. Power - 6.9  
Page 128 - 6.8  
Showcase - 6.4  
Exp. Horizons - 5.6  
Surfing the Nets - 5.4  
CP/M Corner - 5.1  
Clublinks - 4.9  
Venturing Inn - 4.8  
Superbase - 4.8  
M.L. Programming - 4.7  
Power Drift - 4.5  
On The Scene - 4.5  
Intelligent BASIC - 4.5

It is interesting to note that, of the last three columns, about 15% rated "Power Drift" as a "must read", 7% nominated "On the scene" thusly, and about 3% put "Intelligent BASIC" in their highest category. Although "Power Drift" had the higher number of "fans", it also had the highest rate of readers disinterested in the column of the three. By comparison, about 40% of respondents rated "Letter's Link" amongst their favourite columns in C.N.

I was pleased to see such a good response to two of the new columns in "Superbase Snippets" and "CP/M Corner". I must admit I was not really sure what sort of reception they would receive as both are relatively specialised.

## FEEDBACK

One very good thing that has surfaced with this survey has been the number of people who have made suggestions as to what they would like to see covered within our pages and on Disk-Coverer. Suggestions have ranged from "Lotto numbers that WILL win!" (I

wish!), to a Commodore related quiz each month. From articles on extending the 1571 to 8k RAM, to publishing a software availability listing.

So here's a list of the suggested articles and or columns that have been suggested. Perhaps you would like to take on the challenge and write one of these. If so, just drop me a line, or surprise me, and send in the completed article.

## COLUMNS

Graphics - hints and tips on most graphics software available, from Print Shop to Print Master, from Fun Graphics Machine to GeoPaint.  
Desk Top Publishing

## ARTICLES

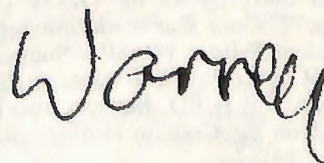
Extending the 1571 to 8k RAM  
CMD product reviews  
Modems  
Telecomputing for beginners  
Constructing an RS-232 Interface  
Computer crosswords/quizzes - implemented this issue  
Word Processor reviews  
Head alignment on the 1571  
Printers  
Short-wave radio and the C64/128  
Controlling external devices (e.g. lights/heaters)  
Reviews of business related programs  
Reviews of disk cataloguers  
Beginners tutorials for GEOS

Articles on prominent people in the C64 World - implemented this issue - see "Who's Who!"

Some interesting stuff there, so let's hope we can get a few writers lined up!

## NEW PRODUCTS

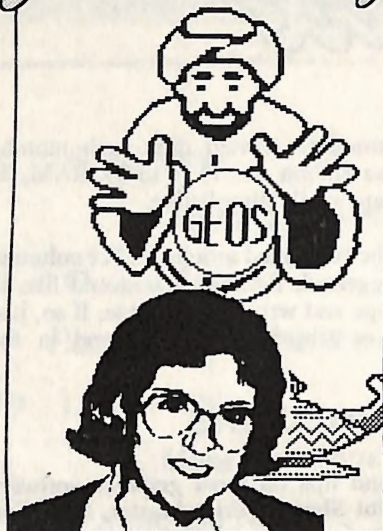
Before I go, I'd better make mention of a few new products now available via merchandising and through C.N.P.D. These include a collection of Print Shop graphics ready to use with the Fun Graphics Machine, The Ultimate CP/M Collection, The GeoManiacs Collection, and The Programmer's Cross-Reference Guide - a 16 page publication supplied printed in a three-ring binder or on disk for you to print out. Have a look for the ad elsewhere in this issue.



Warren Naismith

Editor





This month, we continue the discussion on GEOS enhancements, Public Domain {PD}, and other programs. Some of the programs covered are Select Printer, GeoWizard, UnTrash, Select Input, Album Reverter, Photo Print, PaintScrap, ScrapIt!, ScrapCan, and Perfect Print, among others. [Where possible, the PD versions of many of these programs have been collated by Peter Hunt for later inclusion on the CN GEOS Disks].

### Select Printer.

Most users of GEOS realise by now, that you need to return to the deskTop if you wish to change the printer driver you currently have active. The option, select printer available from the deskTop geos Menu, is not available while you are using an Application such as geoWrite or geoPaint, and others. It is a pity, because often you are in the middle of your work when you realise that you should have changed your printer driver first !.

There are a number of different PD Desk Accessory {DA} programs going by the names of Change Printer, and Select Printer. While most of these programs will work properly on the GEOS 64 set-up, they do not change the printer driver correctly on the GEOS 128 setup. The one that works correctly is Select Printer {40/80 columns}, from Comm-Plex Software, by Jim Collette. It is PD, but can also be found on the Collette Utilities disk from CMD Inc.

With the Select Printer DA program on your Work Disk, you can change

your printer driver in the middle of your geoPaint or geoWrite work. Simply click on the geos Menu, and click on the Select Printer DA program from the sub-Menu. A DBox is displayed for your selection, click once to highlight your driver, then click on OPEN to install the driver. The next time you select print from the file Menu, the new drivers DBox for dpi selection will be displayed.

### Select Input.

Like with the printer drivers, if you wish to change the input driver you currently have active, you need to return to the deskTop to do so. The option, select input available from the deskTop geos Menu, is not available while you are using an Application such as geoWrite or geoPaint, and others. It is a pity, because often you are in the middle of your work when you realise that you may want to change your input driver to do a certain task !.

There are a number of different PD programs going by the names of Change Input, and Select Input. While most of these programs will work properly on the GEOS64 set-up, they do not change the input driver correctly on the GEOS128 setup. A recent release of Input Choices2, a DA program, from Rick Coleman, overcomes the previous inadequacies of other change input device programs. Input Choices2 and a new Printer Choices2, are available on the Mover 3.0 disk [Mover 3.0 was discussed in the March95 column] from Rick Coleman PO Box 44

Sheridan WY 82801 USA.  
Enquire for prices and shipping details. [Allow for conversion rates and bank charges].

### geoWizard

geoWizard is another one of those GEOS programs that allows you to boldly go where others said GEOS couldn't go. geoWizard is available on the Collette Utilities disk from CMD, and is suitable for GEOS users with an REU of at least 512K RAM. geoWizard is an Auto-Exec program, and when placed on your Boot disk after Configure, will automatically install itself. Using geoWizard you can freeze what you were working on, and practically jump into another program or DA, perform some necessary work, and then conveniently exit back to continue whatever you were working on prior to that. Using the geoWizDump DA in conjunction with geoWizard, you can take screen shots like I often use. Collette Utilities is available from Creative Micro Designs Inc. {CMD} PO Box 646 East Longmeadow MA 01028 USA. Enquire for prices and shipping details. [Allow for conversion rates and bank charges].

### UnTrash.

Trashing files is a GEOS occupational hazard, as only the most recently 'trashed' file can be recovered by clicking on the trashcan from the GEOS deskTop if you made a mistake [GEOS v2.0 only]. But what if you accidentally threw ten files in the trashcan?. I have done it, it is horrifying !. There have been several programs written to retrieve files from the trashcan. Just like deskTop, however, you have to use them immediately to successfully recover more than one trashed file. Any other operation you perform on your disk could erase them permanently.

The most popular of these programs are the following two PD offerings. UnTrash v2.0 by John F Howard, will untrash your files, one by one, as you select them listed in a DBGetFiles DBox. Simply click on the one to be untrashed, click on the OK gadget when prompted, and you're rescued. Continue until you have saved your sanity, then select the Quit gadget back to the deskTop.



Another one from John F Howard is UnTrash v3.0. When you run this program, it will display the first seven notePad pages as lists divided into areas by dotted lines, and also the Border area as the eighth designated area on screen. Simply click on the filename listed that you want to untrash, and a DBox will be displayed asking 'untrash this file?'. Click on the YES gadget to rescue the file. The program then redraws the screen display to let you continue untrashing more files. If you are done, click on the file Menu and select quit to return to deskTop. It is really that simple. Note : It is always a good idea to validate your disk from the file Menu back at deskTop when you are done, to re-allocate the file/s correctly in the Block Allocation Map {BAM}. For more information on GEOS disks, refer to the section 'Examining GEOS Sectors' in 'The HandBook of Commodore Disks' {\*\*}.

## Organising Disks.

If you are looking for different ways of being able to re-arrange your deskTop notePad pages instead of using the Border area, and using Multi-file to shift things around, there are programs that can help. Especially if you are trying to do a serious organisation re-shuffle.

## GeoOrganizer v1.0

by Bill Coleman

Published on RUN GEOS Power Pak I by RUN Magazine {now defunct}, is one such program. It is a 40 column program and is limited to 1541, 1571 and REU drives though. The 1581 is not supported. There are help screens available to the user. The RUN GEOS Power Pak I is currently distributed by Creative Micro Designs Inc. {CMD} PO Box 646 East Longmeadow MA 01028 USA. Enquire for price and shipping details. [Allow for conversion rates and bank charges].

DirManager v1.0 by Roger Lawhorn, and is a 40 column PD program devoted to sorting out your GEOS disks. The program works with 1541, 1571, 1581, and REU drives, and will support up to four drives when they are implemented. It will also handle sub-directories {1581 only}. Desk Organizer v1.0 by John F Howard, is another kind of disk management 40 column PD

program. When you have deleted a lot of files from the notePad pages on deskTop and the files are scattered around, use Desk Organizer to compress the files onto fewer notePad pages, and delete the unnecessary notePad pages. Dir Master v1.1 by Kent L Smotherman, is another disk management 40 column shareware program. This 40 column program works with 1541, 1571, 1581, and REU drives. Documentation is provided.

## Photo Scraps.

Using the Photo Manager is not the only method available to GEOS users, for keeping track of their Photo Scraps and Albums. Many new products have been released which allow you to manipulate Scraps without even going near the Photo Manager. Photo Mover is one such program, [discussed in the March95 column, along with ScaPeck]. Other programs can revert albums to an earlier version of Photo Manager {Album Reverter}, and print out all the Scraps in an Album without seeing them first {Photo Print}. Also there are programs that can make all the large Scraps that you may ever require {such as PaintScrap v2.1, ScrapIt!, ScrapCan v1.0, ScrapCan128 v1.3}.

## Album Reverter

Album Reverter is a 40 column PD program by Joe P Buckley, and it is a small Application which will allow users to convert v2.1 Albums to a lesser version, to be accessed by v1.x Photo Managers. The reversion is destructive to v2.1 Album specific information, such as scrap names. Album Reverter has been enhanced by a new version, Album Reverter+, a commercial release from Joe P Buckley. This program is 40/80 column compatible. Album Reverter+ is available on Storm Systems Disk I from Storm Systems Joe P Buckley 464 Beale Street W Quincy MA 02169-1307 USA. Enquire for prices and shipping details. [Allow for conversion rates and bank charges]. Although I believe that this disk is now also available from Performance Peripherals Europe Michael Renz Holzweg 12 53332 Bornheim GERMANY. Enquire for price {DM} and shipping details. [Allow for conversion rates

and bank charges].

Photo Print v1.1 & v2.1. Both these PD Application programs by Dave Hunt, can be used to make a hard copy of the clip art Scraps in your Albums. Use the version necessary for your Photo Album version, or use a program like Album Reverter to make the Album compatible. When using both these programs, one useful piece of advice is to use a single pass printer driver that does not display a dpi DBox. Some screen corruption could occur otherwise, along with some serious garbage printing. An Epson driver such as the FX-80 would be perfect for the job.

## Large Scraps.

At times you might need to make a Scrap that is larger than the Drawing Window in geoPaint, rather than try to cut it into pieces and rejoin them later. Two of the best large Scrap makers in the PD are PaintScrap v2.1 by Dennis Seitz, and ScrapIt! v1.0 by Michael W Schell. ScrapIt! is also a picture converter as well as creating large Scraps. To use the large Scraps created by either of these programs, you would need to use them in geoPublish, {or use the commercial program ScrapCan, that handles pasting as well !}.

Both PaintScrap v2.1 and ScrapIt! are 40 column programs, and are straight forward in operation, and neither require extensive instructions {although provided} to use them. PaintScrap is much more precise in getting exact the extreme right edge of any geoPaint document. This is something you need to consider if your graphic is hard over to the right hand side of your document. PaintScrap also supports DA's, such as the Photo Manager, from the geos Menu, but only supports the first two current drives. PaintScrap can copy a full page document, or intermediate sizes, to a Photo Scrap. The Scrap can be up to 64K, although Photo Manager gets a disk error when cutting or copying a Scrap out of the album when it is larger than 32K !.

Another 40 column large Scrap maker available commercially is ScrapCan v1.0 by Nate Fiedler. ScrapCan is an Application program which not only creates large Scraps of ANY size, it can also PASTE them into another



geoPaint or geoCanvas document on up to three drives. This is a feature that has been needed by geoArtists for a long time !. The only drawback with ScrapCan is that there is no way to access DA's from the geos Menu. ScrapCan can also copy and paste colour if you need it. This is perhaps the most useful graphic program ever made for geoPaint users. ScrapCan will support up to three drives. It will also let you select the threshold {darkness of pixels} value for the overview of the document you are working on. ScrapCan v1.0 is found on the GeoCanvas v1.2 disk previously available from Creative Micro Designs Inc. {CMD} PO Box 646 East Longmeadow MA 01028 USA. Enquire for prices and shipping details. [Allow for conversion rates and bank charges]. Note : An upgrade, ScrapCan v1.3, is currently available on the GeoCanvas64 v3.0 disk. This upgrade addresses the shortcomings noted in v1.0 above, and in addition supports up to four drives. An interesting observation is that v1.3 also operates in 40 column mode in GEOS128 with no problems. Now there is NO reason for you not to buy this one {see information with ScrapCan128 v1.3}.

And now we finally have an 80 column large Scrap maker available commercially. It is ScrapCan128 v1.3, an upgrade by Nate Fiedler. ScrapCan128 is simply divine to use. It performs essentially the same as v1.0, but with up to four drives now being supported. A notable exception is that DA's are now available from the geos menu, and the quit option has been placed on the file menu. The next most noticeable improvement is the inclusion of an option to paste transparently to your destination document. If selected, the data from the scrap is blended into the existing data in the document. Disk errors are more closely monitored by the program than before. ScrapCan128 is a great accessory program for any graphic collector or clip-o-holic. ScrapCan128 v1.3 is found on the GeoCanvas128 v3.0 disk available direct from Nate L Fiedler 5711 Mt Pleasant Road Bernville PA 19506-9313 USA. Enquire for prices and shipping details. [Allow for conversion rates and bank charges]. Or in Australia GeoCanvas128 v3.0 is distributed by Peter Hunt 70 Betula Road

Doveton VIC 3177. Enquire for prices and shipping details.

## Large Scraps to GeoWrite

The drawback of making large Scraps using these utilities is that geoWrite will not accept them. Any graphics larger in depth than the normal geoPaint Drawing Window, will be too large for geoWrite. You would need to use geoPublish to make use of these larger clips in their entirety. There is good news though. With patience and skill it is possible to transfer graphics larger than the geoPaint Drawing Window to geoWrite with complete success. A complete description of this process can be found in the section 'More To Managing Photos' in 'The World of GEOS HandBook III' and also in the section 'GeoQuery' in 'GEOS in Review'.

## Multiple GeoWrite Print-outs

Most people express the desire for multiple printouts from geoWrite. The geoWrite Print DBox will print a range of pages, but it will not repeatedly print the same document. Another method is to use a new commercial program produced specifically for geoWrite, called Perfect Print LQ for GEOS v2.5. With the recent development and release, of the Perfect Print - Print System Application by Thilo Herrmann of Germany, fonts, LQ fonts, and geoWrite documents, have never before looked so good. Some HQ Fonts are also provided for use with geoPaint and geoPublish, and the interpolating Printer Drivers provided.

When you are ready to print your geoWrite document, select Start LQ {a DA program}, from the geos menu in geoWrite. Start LQ activates the GEOS LQ Application, and a DBox is displayed. This DBox not only prints a range of pages, but also allows you to select the number of copies. When printing is complete, a Final Selections DBox is displayed, which also allows you to print the same document again. With the interpolating Printer Drivers provided with the Main System disks, you can get the smoothest printed geoWrite documents ever. It is very difficult

to imagine the kind of detailed print quality that this Print System produces when used correctly, even from the humble 9-pin dot- matrix Epson compatible printer. It is so remarkable, you really have to experience it to believe it.

The GEOS LQ system works best with its specially designed LQ Fonts, along with using the interpolating Printer Drivers provided. There are also GEOS utilities provided for Font Editing, and for creating, or converting, your own LQ Fonts. There is now no limit to quality and excellent documents, in geoWrite or GEOS. Perfect Print is available as a Standard Package, and a Font Package, or the Complete Package containing both, from Creative Micro Designs Inc. {CMD} PO Box 646 East Longmeadow MA 01028 USA. Enquire for prices and shipping details. [Allow for conversion rates and bank charges].

## Multiple GeoPaint Print-outs

After everything mentioned you still want more ?. One quick polish of the genie's lamp and your wish is granted. GeoPager is the Application of choice for multiple paint printouts, and you can read all about it next month in a special review !.

All of these GEOS programs mentioned so far, show how you can get more from your standard system, using either PD programs or commercial upgrades, most of which can be readily obtained. I use these programs on nearly every GEOS day, to such an extent that I have become complacent and forget that they are actually there, and working for me. But these programs are the reason why I can do so much with GEOS. Maybe they can help you too !.

## Readers Three Wishes And All That

...

From Bodo Schwarz of Bulli NSW, "... I have finally managed to finish my first Newsletter, using geoPublish, for the Illawarra District Orchid Society {copy enclosed}. After months of trial and error with Pub, I advise anybody wanting to familiarise themselves with Pub, to put away



the manual after leafing through it, and then get 'The World of GEOS HandBook Series' [by JMV Grafix], [and] Roy McIntosh's 'The GEOS Collection' and any other material that may have been published in magazines in the past describing hands on experiences with Pub. I found the Pub manual the most unreadable publication I've come across. Maybe you've got to be a 'Rhode's scholar' to be able to follow it, I'm certainly not. Speaking to the Editor of 'Big-Byte', the Newsletter of the Commodore User Group of Wollongong {C64 Development Inc.} on similar comments I've made [about Pub], he totally agreed with me. So I can suppose that I'm no 'Robinson Crusoe' when it comes to trying to 'wade' through anything written in other than 'plain English'. Other than that it is a quite powerful program. I've still plenty to learn, but once having mastered the basics, the rest seems to come by itself as you go along. I would like to see a 'front page' option [in Pub] as you have in geoWrite though. All in all I'm satisfied with the result and I hope you can make comments in regards layout, format and other improvement would appreciated {a laser printer is out}."

Gg. Thanks Bodo. It is always good to hear how someone else has managed to 'conquer' Pub. Pub really is a lot to absorb isn't it ?. I agree pretty much with what you have said about Pub, particularly when I look back at making my first publication three years ago. Pub is so scary until you get over that first 'learning curve'. I found that I needed to have the Page Graphics and Page Layout Tools pictures handy {a printout of a geoPaint PD file}. That reduced the amount of flipping through the manual that I had to do. I think that your layout with Pub is very good, you handled the subject matter very confidently actually. Try using the font LW-Cal instead of BSW, BSW is a Publishers nightmare font. I liked the Reader font, as you say, it is very 'readable'. I like your presentation, you have made good use of Pubs facilities. - Nope, just can't think of anything negative to say. You and Pub will learn to 'dance together' smoothly as you progress. Keep up the good work, and the scanned Orchids look great!

Next month, as promised, we start to tackle the new items that have come in for Review. We have first up, PARSEC's GEOS Stuff [which includes GeoPager128 & 64, and FontPaint 128/64], distributed by

Michael Renz of Germany {Performance Peripherals Europe}. Until then, happy GEOSing.

Send in your comments, or great GEOS discoveries, and I will respond when I can in this column, unless you wish a private reply, in which case please send a SSA{Business}E and I will write you back. Special thanks to Rick Coleman {Photo Mover fame}, our USA GENie BBS correspondent for your continued support, and to Michael Renz {Performance Peripherals Europe}, our German correspondent, for your continued support.

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{\*\*} The World of GEOS HandBook Series {I, II, III}, The HandBook of Commodore Disks, and GEOS in Review, are currently available from JMV Grafix

The World of GEOS The World of GEOS The World of GEOS



**HandBook ©**  
**and Disk**



**HandBook II ©**



**HandBook III ©**

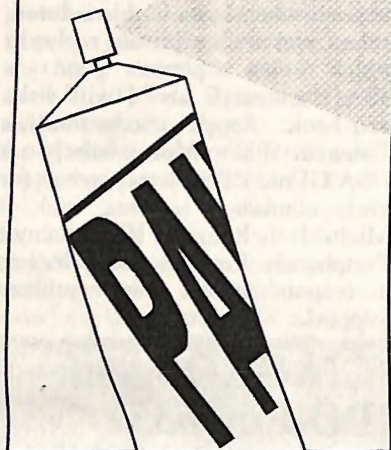
The HandBooks are available folded and saddle bound to A4 size, for AUD\$15:00 each\* {includes P&H}, from

**JMV Grafix**  
**P.O. Box 635**  
**Blair Athol**  
**South Australia 5084**

Cheques Payable to Jane M. Jones \*Overseas Orders add AUD\$5:00

**Commodore**  
**NETWORK**  
**April 1995**





Howdy folks! It's once again time to see what has been happening on the demo scene recently. First off, more news for you.....

## DOWN UNDA

Some information on this forthcoming Australian/New Zealand demo was included in the February 1995 issue. Further to that, the following groups may contribute a part: Bad Karma, Dragon, Lithium, and The Dark Realm. Groups already with a part include: System, Tide ( 2 parts ), and The Pleasuredome Crew. Individuals with a part include: Steiger and Whiplash.

The Purpose of this demo is to gain recognition for the Australian and New Zealand scene in European countries. It will hopefully bring the two scene communities closer together, which will benefit all C64 users in Australia, as much of the recent software for our C64 originates from the European demo scene.

In any event, this demo is progressing nicely. A lot of individuals are offering their support, whether that be by spreading the finished production or actual code work.

A number of Australian disk magazines are supporting this production by including updated information on it in their latest issues. Such a magazine is "Smash", issue 9 of which was released mid March.

## RECENT RELEASES

Continuing the tradition of previous columns, this month I will look at some recent European releases. These have all been released between December 1994 and February 1995. There's quite a few I want to look at, so lets get started.

### - BRUTAL COME BACK/LIGHT:

After a three year break light return to the C64 scene, which is good to see! This is a four part demo, featuring: The Eagles "Hotel California" music, morphing shapes, and a fast "Doom" style maze. Possibly most demo freaks will have seen all this before, but in any case, it's great to know Light are still active on the C64.

### - FINAL TORTURE/PADUA:

Here we have the last demo in the very popular series. It contains many effects, some of the better ones include 12,160 sinus dots ( which regular demo watchers will recognise as quite an achievement), a spinning Padua logo, a variety of vector cubes and, amongst other things, some very nice full screen graphics. I must say some of the effects in this demo seem similar to those seen in Camelot's "Towerpower Preview", but this demo is no comparison to that master piece.

## - LAMENESS RULES/OXYRON

A quick production from this popular crew, released when other crews were quiet. According to Oxyron, it lacks design, but despite this and the fact that it only has three parts, it gained recognition. Included here: a realtime 8D texture tunnel, a texture mapped cube (at 70% of it's maximum speed, so it is yet to be optimised), and superfast texture landscape. An interesting demo, if only to see the C64 can handle routines such as those here.

## REVOLUTION/CHORUS:

The first demo from Chorus, includes a glenz vector, dycp, chessboard, colour bars (who said the C64 is only capable of 16 colours?) and loading parts which link the whole thing together. One of these parts has been inspired by Jurassic Park. An impressive first demo.

## DISK MAGAZINES

### - INSIDER 4/REFLEX

Full of information. Included are demo and disk magazine reviews, scene party reports, three interviews, hints for coding vectors, and even music reviews. Something for just about anyone.

### - PROPAGANDA 15

Although this magazine contains all of the standard chapters, its style of writing makes it something special - in my opinion anyway. A magazine that tells it as it is.

## GRAPHICS COLLECTIONS

### - DIGI ART4/MAYHEM

A disk full of digitised graphics accompanied by music and messages.

### - FUNKY ART 1/MAYHEM

Disk jackets converted onto the C64! Each full screen graphic is quite detailed and sometimes it can be difficult to distinguish the image. Each screen is accompanied by a different tune. Overall, a production graphics freaks will enjoy.



## GAMES PREVIEWS

For gamers, there's been plenty of good PD games released recently, and an equal amount of previews, indicating the future looks bright. Recently, one preview came into my possession that I just had to write about. The game that has taken the IBM by storm. I am of course referring to "DOOM"

### DOOM PREVIEW:

This is the first glimpse of the C64 conversion. A choice of weapons are available (a knife and a gun when you start) and more powerful weapons can be collected as you go. The game plays on a single screen, where you are confronted by enemies that jump around. To move around the maze, click on one of four directional arrows in the bottom right corner of the screen. The back ground graphics are very well presented, which is true of the entire preview. This is definitely the C64 game to watch out for.

Well, that's it for now. A brief look at what had recently been released, but by no means everything. I hope this column encourages some of you to look at some productions from the demo scene, where you really can find a program to suit your needs! As an example recently an Educational pack was released, with more said to be on the way! The quality of many programs is exceptional as the demo scene

consists of many very talented individuals, many working for various software houses.

### WHERE TO GET THEM

To obtain anything written about within this column contact ALTERNATIVE SOFTWARE (Address below). They will supply you with everything you've read about here and in the past columns and much more besides.

### THAT'S IT

That happens to be all I have this month. I Hope you've found it of interest. I'll return next month with more news, reviews, information and whatever else happens to be relevant at the time. Until then if you would like to obtain anything mentioned, have any further feedback or ideas concerning this column, ANYTHING to say at all, here is the Address to write to:

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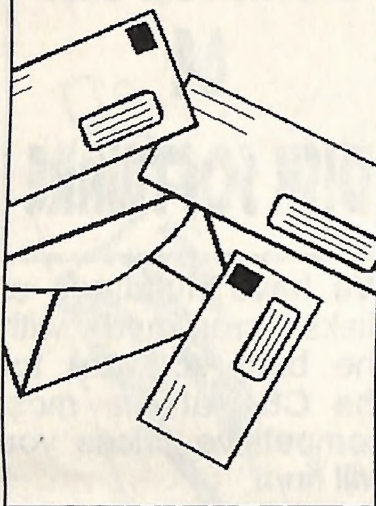
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**Commodore  
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# Letters Link



My goodness, the mail-bag overfloweth this month so I've had to be a little selective this issue. If your particular piece of correspondence doesn't appear here, it will be included with the next issue. Please keep the mail coming, though. I would rather have too much than not enough!

First off this month comes this little offering from regular correspondent, Gordon Wormald, and broken up into sub-sections according to subject:

## RAM EXPANDED 128

Mario P. is to be commended for his Feb. article on C128 internal RAM expansion possibilities, but it occurs to me that there is one interesting potentiality not mentioned. If we restrict our aims for the C128 to the sort of internal RAM expansion necessary to provide lots of inboard RAM-disk capacity, it may be that multiples of memory bank 1 could be installed. Selection among them could be by providing another CIA chip addressed via (say) \$D031-F. I wish that I had time enough to explore it further.

*An interesting, thought, Gordon. anyone out there feel capable of looking into this particular possibility?*

## BACKING UP THE POCKET SERIES

Re Feb. Letters Link from Charles Quinn about backup for Pocket

Writer (et al) : your advice "take the chance!" seems very questionable to me. I used Pocket Planner for some years until it went phut and then I was in big trouble - relieved only by a chance gift of a second copy of the disk. Now I wonder how long that will last, and do not use it for anything important.

*You'll be pleased to learn that, through the publicity afforded Charles via "Letter's Link, that we have managed to arrange full back-up copies of the "Pocket" programs for him. As for my advice, well, as far as I'm concerned, if you can't utilise a piece of software, it is of no use to you. Admittedly, Charles would be taking a chance, and I certainly wouldn't be utilising such software for anything for which it was vitally important to have on-going records and access thereto. It must be said, though (and it is worth bearing in mind that I am totally unfamiliar with the Pocket series), that most forms of text/numeric data generated on computers can be reformatted for use with other software/hardware configurations, and that there are numerous programs about that can help in this process.*

## CANBERRA COMMODORE CLUB

Also in Feb. Letters Link : Sadly, Matt Blydenstein's brave words on the status of CUG(ACT)Inc. have been overtaken by events. Continuing loss of members forced the Committee to resolve on 9/3/95 to set about winding up the Group. However, all is not lost. A small

core of devoted C64/128 people are intent on continuing their hobby under the banner of ACT8CC (8-bit Computer Club). A financially lean group without the fiscal and procedural hampers that come with incorporation, it should be possible to avoid anything like the fiasco of the 1994 AGM when CUG(ACT) got a Committee who mostly lived 200 km outside Canberra and who never worked at it effectively. More later, when the muddled waters become clearer.

*It's unfortunate that things have come to pass in this fashion, and that what was once one of Australia's leading Commodore clubs has folded. But, out of the ashes has come a new entity, and Commodore Network will be more than happy to help in any way possible.*

## FAULTY SECURITY

Feb. L.L. again : I am sorry to have to point out that the security box suggested to Nicholas Dudman for his computer could get him into big trouble from overheating if he attempts to run it in summer. The sides would impair the required flow of air unless their fit is so loose that security is lost. Certainly, locking the power cords away should be a good first step and maybe all that is required.

*You are, of course, correct. It was a rather alarming oversight on my behalf not to make allowances for heat build-up.*

## CRASH TEST

Feb. p.20 : Crash Test : Not on your 80-screen, where <C=.SH> only changes case for characters screened AFTER that.

While mentioning <C=SH> you might have gone on about its use in easily identifying whether a listed character is alpha"O" or numeric"0". If I have entered some DATA statements, I <ESC X> to the 40-screen then LIST. Repeated <C=.SH> makes any 0 on the screen really stand out as it does not change, unlike alpha"O", which will bob up and down : very useful in confirming SYNTAX ERROR due to a numeric GOTO.

*Once more I'm caught with my pants down! By the way, thanks for the extra info on 0/O detection. A simple and logical procedure which*



*I, personally, have never thought of!*

## SPLAT!

Also : SPLAT! : Some of your readers employing the recovery technique described (or any other) will be disappointed to find that they get back very little text. This can happen if they fail to check that there are enough blocks free. Nothing more can be written once all blocks are used.

(What is this "good old Uncle" business? I suspect that if you are old then I'm ancient.)

*Naturally enough, if a user attempts to save text to a full or nearly full disk with insufficient space for his file, they stand a good chance of loosing a lot of their work. The procedure we mentioned will hopefully help recover at least part of a text file and thus save at least some typing.*

*As for the "Good old uncle" bit, well, sometimes I feel old, and the rest of the time I'm too busy trying to learn enough to keep up with you "ancient" blokes!*

## PRINTING A DIRECTORY

Also : PRINTING DIRECTORY : Perhaps beginners should have been warned that LOAD"\$" will overwrite BASIC text?

*Excellent point, Gordon!*

## DIAGNOSTICS

Feb. p.23 : DIAGNOSTICS : I'm afraid that I have very little faith in diagnostic check-lists. For instance, the last time that I saw a 1541 with no LED on power-up, it was due to a connector sitting in place but not pushed home, but List#1 does not cover this. And what are those 6-digit chip numbers?

The disk alignment checking problem is really difficult because it must rely on analysing the drive's response to reading a disk with known track-positioning. The best one that I know is "1541 Physical Exam" by Cardinal Software, which has a set of sectors which depart from ideal positioning by increasing steps of 1/1000 of an inch on tracks 1, 17 and 35. Successful reads are displayed graphically on the screen and reported in a summary. Of course there is no way that can be

copied except on the manufacturer's very special unit. Otherwise the best approach is to analyse the result of reading a trusted good disk. Here we have two problems : manufacturers do put out misaligned disks occasionally, and the difficulty of checking that the head is centrally over a track.

The first should be a matter of trusting ORIGINAL disks from some volume software manufacturer (but see if disks with three different titles agree). The second is harder. The best that I know is based on the theory that if there is serious misalignment then data on a track can be also read when the head is displaced by a half-track-step which the 1541 or 1571 can perform.

Can I suggest that if someone is writing an alignment-checking program, that it would be a good idea to include a check on the upper head in a 1571 ? There is no guarantee that it is OK even if the lower one is.

*The check lists are only designed as a rough guide, outlining the most probable cause. As with any electro-mechanical device, I imagine, numerous faults can occur which will duplicate a particular condition, and we can not hope to make mention of them all.*

*As for the problem of a suitable drive alignment program, it seems that there are several utilising a similar procedure as that above. These are, as you said, impossible to duplicate, and we are looking at several other approaches at the moment. Hopefully we will come across something that can be included on the next Disk-Coverer.*

## PC SCANNERS ON THE 128

Now, leaving Gordon to his own devices, we pass on to another correspondent in Alex Przybylski:

Well, the magazine is going from strength to strength. Obviously there is a fairly bright future for our machines.

I was looking back at the first few issues, and it's nice to see how it has gone since then.

Generally, if there is a slight downside, it is the lack of product reviews - and how non-Commodore hardware (modems, printers,

scanners, etc.) can be made to work with our machines. However, that is only my opinion, and a minor niggle at that!

What happened to the review of Fast-8? Is there going to be a 128 version? Re scanners - do you know if scanners for the PC can be used to work with the C-128?

It would still be nice if someone could come up with a seamless version of Superbase and SuperScript - you know, a quick-load combined version, and particularly be able to work out of any partition. At present, they can only go in to partition one. Together, these programs are really as good an operating system as one could wish for in everyday use. Since I do use them every day, I can vouch for this.

*Thanks for your thoughts on C.N., Alex. I have made a conscious effort NOT to get too bogged down with product reviews within the pages of C.N., with only two columns, "Showcase", and "In Review" being designed to cater for this facet of Commodore computing. "Showcase" is principally to cater for software/hardware reviews, whilst "In Review" deals with publications and the like. From time to time, additional reviews may be carried as and when items become available for review, or articles are submitted. Just for interests sake, the following reviews are slated for coming months: HARDWARE - Fast-8. SOFTWARE - 64-Net, RAMLink Commander, The Write Stuff, The Illustrator, The Fun Graphics Machine, and Autostart 128. There are others that may also appear, but nothing can be announced as yet!*

As for utilising PC scanners with the 128, it is possible. The major problem being a lack of suitable software. The famous "HandyScanner" is only a low-end PC scanner adapted for use with the 64, and provided with software to translate the signals received in to something usable on our computer.

## THIS 'N' THAT

Down beautiful Tasmania way, and the equally beautiful Barbara Muir writes:

There are a few things in the

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**NETWORK**  
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January issue that I would like to comment on:

1) Glad you no longer staple each issue as it saves me time taking them out!

2) The postal wrapping on each issue so far has been OK.

3) The 1570 disk drive. My son bought the 128 computer, upgrading from a VIC20, from K-Mart, and the disk drive that K-Mart were selling was the 1570. The 1571 was not available until about six months later. As I now use the computer, I still only have a 1570. Works OK for me although a 1571 would be better when using GEOS.

4) The 1230 printer. Since writing to you some time back about printer drivers, I have changed the setting to Epson for both GEOS and SuperScript, and when I use Print Shop I switch the printer on and run the program below which tells the printer it is in Commodore mode. I then load Print Shop. This saves me the bother of remembering to change the printer back to Epson when I have finished, as switching off the printer automatically sets it back to Epson.

```
10 OPEN 4, 4
20 PRINT #4, CHR$(27);
CHR$(126); CHR$(53); CHR$(2)
30 CLOSE 4
40 OPEN 4, 4
50 PRINT #4, CHR$(27);
CHR$(126); CHR$(53); CHR$(1)
60 CLOSE 4
```

I have found through experimentation, that you have to change the printer to IBM mode first, and then to Commodore. For some reason it doesn't work if you try to set Commodore mode first. If printing from BASIC, the above program should be used initially to set up commodore mode also, or remember that CHR\$(10) is the code for a line feed and carriage return, and must be used at the end of each line.

I have written this letter using GeoWrite to show that the full screen can be printed using a serial cable, and that a GeoCable is not needed to get an 80 column screen print-out. GEOS works well with the 1230 printer sent to Epson FX80 mode, and, using the lasermatrix FX80 print driver, can achieve almost NLQ.

Many thanks for that routine and the information in your letter,

Barbara. I'm sure many of our readers will find your comments of value.

## PENGUIN TOWER

Up in N.S.W., and Gordon Screen writes as follows:

I have just finished playing a new demo of the game "Penguin Tower". I thought that I would write and give my honest opinion of it. It was featured on a cover-tape on a recent Commodore Format magazine. There are ten levels and ten bonus levels on the demo.

I have spent several hours engrossed in this game, and would class it as in the same mould as Mayhem in Monsterland. The aim of the game is simple, not to get killed off by the penguins! There are bombs which you may pick up, but make sure that you are not in a direct line.

The final product has been released overseas and contains 20 levels, with 20 bonus levels.

I would rate this as 95% hookability, 95% for graphics, and 80% for music and sound effects, so look out for it!

Bev at C.N.P.D. has the demo version, so if anybody would like a copy of it they can contact either Bev or myself!

Thanks for the scoop on "Penguin Tower", Gordon.

## A WARNING FROM CANADA!

Up in the northern hemisphere, and Bev Harvey of Saskatoon, Saskatchewan, Canada, writes:

- News of the 8-bit (Germany) CD ROM sounds interesting, let's hear more quickly!

- CMD are offering their 20 meg hard drives for under \$U.S.300.00

- Better caution your Australian readers re Commodore mail fraud. Out of three ads in the December issue of Commodore World for which I sent \$\$\$, all three have gone somewhere. I have over \$200.00 Canadian invested for nothing - I just will have to add these three to a list that is already as long as my arm.

I am hoping to arrange a review of Germany's CD-ROM for an

upcoming issue. There is also news that a CD is being put together (or has been put together) by an American concern called "Walnut Creek". This, apparently, contains a mix of CP/M and C64 files. I am awaiting further information.

The news of CMD's price cut re hard drives is certainly good to hear.

Mail fraud is always a concern. I know many Australians are reticent in dealing with overseas concerns for just this reason. If you intend buying merchandise from overseas, it is probably prudent practice to deal with only well known and reliable concerns.

Back home to the land "down under", and David Slater of Bibra Lake, Western Australia writes:

After receiving five issues of Commodore Network, I thought I would write and tell you that I have thoroughly enjoyed each issue and I hope you are able to keep this great little magazine alive for many, many issues. Thanks for all the time and effort you put in.

Question 1:- (a) Do you know anything about the program "Fun Graphics Machine". I have never seen this program mentioned in your columns. (b) Do you support this program, and can you tell me where it would be available in Australia. (c) Is there any possibility that a column on this program is envisaged in the near future.

Question 2:- Would it be possible to run a column on "Desk Top" publishing on the C64/128, giving the various programs available in this field, and perhaps giving the pro's and cons of each. I have PaperClip Publisher myself, but I am interested in others as well, such as GeoPublish and Newsroom, etc.

Question 3:- I recently bought a Commodore 128D through your Micro-Mart page, and included in the package was a SwiftLink cartridge for use with a modem. I am interested in eventually getting a modem and using it with the 128D. What I would be interested in is a column where this subject is covered from the angle of the absolute beginner, and giving an overall view of what is possible, the kind of modem to get, etc.

I myself am very ignorant of this



facet of computing, and perhaps other readers would welcome this kind of info as well.

These questions are not designed to say that the magazine does not cover what I want, even if you never covered any of these things, I would still be an avid reader of what you publish. These are just suggestions that would interest me personally. I recognise also that these subjects may have been covered in earlier issues, and if this is true, I would like to know which back-issues to obtain.

Aw, shucks! Many thanks for the pat on our collective backs, David. 'Tis true, a lot of hard slog does go in to producing Network, but, for us mad keen (or is that just plain mad!) Commodore enthusiasts that put C.N. together, it is also immensely satisfying, especially when we receive a letter like this!

But enough of that. Let's see if we can help you a little with your queries!

Firstly, I have a copy of FGM in my personal software library. Unfortunately, I haven't had a great deal of time to play with it since I purchased it over a year ago, so am far from knowledgeable in its operation. I do know however, that it is not available from within Australia since Friendz & Contax folded, so the only place that you can acquire one from is in the U.S. I have approached FGM re distributorship here on a couple of occasions, but have never received a reply. As for a column on FGM, well, if we can find a writer, there is

always a possibility. Probably more feasible, though, would be an on-going series of articles covering graphics, graphics programs, and the like, of which FGM (along with Print Shop, PrintMaster, etc.) would form part of the coverage area. It would carry hints and tips and general items of interest concerning those programs and more mentioned above. With this wider coverage area, it would become a little simpler for the writer/s to put together, and would be more pertinent to a wider readership. I hope someone will find the idea of interest and will consider taking up the challenge for us.

Now, your second question. A series of articles on desk top publishing is in the wings. It is not specifically along the lines you've outlined, as it deals with the generalities of layout and design, passes on hints and tips, and is not (as far as can be avoided) program specific.

I do have access to a number of DTP programs, though by no means all, so, if anyone out there would like to report on the relevant software in their possession, please do so. If we can collect enough articles on the subject, we will most certainly publish a series of articles on the various programs available.

Question three is along the lines of the thoughts and ideas expressed by a number of other readers recently. Once more, this is not an area of computing in which I feel competent in, although I do use a modem regularly. However, I am

sure something can be arranged along these lines for a future issue/s. There are several articles that may be of interest in past issues of C.N. dealing with telecommunications for the beginner. These can be found in the September, October, and November 1992 issues amongst others.

Lastly, one thing I hope all our readers realise is that I WANT your input regarding what you would like to see within C.N. If possible, I will at least try to offer some coverage of a given subject, whether a single article or a regular column. All that I ask is that people realise that there is a vast area of knowledge within the constraints of Commodore computing with which I personally am not familiar, in which case I am reliant on those more conversant with a specific subject to step forward and to take up the reigns and write an article/s on that subject. I consider myself very lucky in the knowledge that there are very few occasions in which someone doesn't take up the challenge and fill the breach.

So please, David, do let me know your thoughts and requirements, ask your questions, and don't be afraid to criticise or praise where you feel either is due. C.N. is what is now, not only because of hard work by we who have put it together, but also because people like yourself have cared enough to make comment and to pass on their thoughts. It's a team effort, mate, and you are a part of that team!

## JMY Grafix

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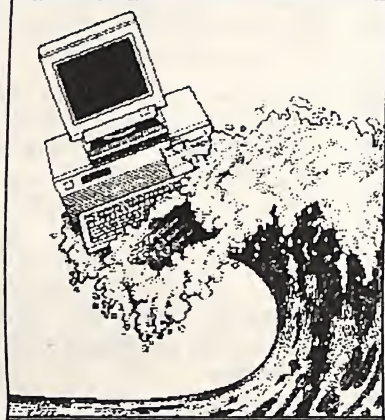
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April 1995





Over the past few years one of the fastest expanding areas of the computing industry has been that of telecommunications. With the inception of Internet and the increasing availability of modems to the average user, the telephone lines must have become accustomed to the transfer of data rather than the sound of the human voice, and in no way has the Commodore 8-bit missed out on this exciting facet of computing.

One of the companies which has led the way in the production and distribution of modems, those necessary hardware items, to the wider community has been an Australian-based company called Maestro. Of the many people I have encountered who own a Maestro modem, few could offer a complaint of any sort and the vast majority would, as I do, recommend the purchase of one of this company's packages as the best possible way to be introduced to the world of telecommunications. Therefore, this article will examine briefly three options offered by Maestro which between them should encompass both the needs and the budgets of most Commodore users.

### MAESTRO 2400XR

Perhaps the best place to start is at the most basic unit on offer. The Maestro 2400 XR is a simple and cheap but efficient model which should cater well for those users who wish to get online for as little expenditure as possible. Running at either 1200 or 2400 baud, it is fully automated and thus can be

## Surfing with Maestro Modems

controlled wholly by the computer itself, bypassing the old requirements of flicking switches at certain times during a call and so forth. A small, aesthetically pleasing unit which is roughly the size of a

standard hardcover book of a few hundred pages, it should be able to fit somewhere on a desk or tabletop without much trouble. I am told that the XR has been running on a friend's C64 for over two years without any trouble, and thus there should be no cause to doubt its reliability.

The documentation that arrives with it is generally MS-DOS centred, but with a standard communications program such as Novaterm or Dterm on hand it should give enough basic knowledge to allow the modeming novice to install it and make the initial call without too many problems. The XR is, of course, limited in its baud rate, but I have found that even with the higher speed modems which have arrived in recent times, 2400 baud is easily fast enough to allow the average computer user to chat, send and receive messages, and transfer relatively small files on a local call. Prices vary from place to place, but it seems that at the moment the Maestro 2400 XR can be purchased for well below \$300, making it accessible to most users. A very worthwhile and reliable investment overall.

### MAESTRO 2400 ZXR

There is little to add concerning the

XR's fraternal twin, the 2400 ZXR.

However, I decided to mention it here as it is one of these models which has served me well for over five years now. Indeed, since that time has passed a newer model resembling the sleek XR has replaced by slightly older and bigger unit, but the basics of the machine remain the same. Also fully automated and run by the same set of commands essentially, the ZXR has the added option of running at 300 and 1200/75 baud. This function has become a little less important in these times when 2400 baud has long been the standard rate of transfer, but still has its uses. There are many modemers out there who have retained their 300 baud or 1200/75 baud modems, and thus the ZXR is able to "talk" to these modems on a one-on-one level if that is required rather than conversing through a BBS. Alternately, it can also be handy should the idea of toying around with one's own BBS come up - the number of these catering for the slower baud rates has declined but the demand appears to be steady. The Maestro

2400 ZXR is available for around the \$300 mark, and my true recommendation comes from the heart for a unit which has - and still does - served me very well.

### MAESTRO 9600 XR

Of course, there are those who require high speed file transfers at STD rates for reasons of either business or simply pleasure. For such people the best option would have to be the younger brother of the above two models, the Maestro 9600 XR.

With 2400 and 1200 baud as fallback options for BBSs which don't cater for 9600, this modem is the fastest of the three by far and as such represents the best investment when the user finds that time costs money. Physically built along the same lines as its elder relatives, the 9600 XR is similarly easy to operate. Although I have never had the opportunity to put of these through its paces, all reports suggest that it is as reliable and trouble-free as the two 2400 baud modems.

**CONTINUED BOTTOM  
OF NEXT PAGE**



## FOR SALE

Xetec Super Graphix Printer Interface - with fonts disk & copy of instructions \$85

Casiotone MT540 Portable Electronic Organ with MIDI Receive capability. Includes power pack and MIDI cable plus Passport MIDI Interface (connects organ to C-64 and passes MIDI info between them). Also includes a copy "Music Shop for MIDI" (MIDI music generator/player) program for the C-64 along with two disks of Music Shop for MIDI music \$210

Epyx Fast Load Cartridge (new - original packaging with instructions). Cartridge includes a Machine Language Monitor - 4 available \$55 each

Epyx Fast Load Cartridge - As above, but secondhand with no instruction booklet - 2 available \$40

RUN Magazines - February, March, April, and May '87 issues \$3 each or \$10 the lot.

Freeze Frame Cartridge with Utility disk \$45

Commodore 1351 Mouse with a copy of the disk and instructions - 2 available \$50

Netcomm Auto Modem for C= 64/128 - 300 & 1200/75 Baud rates - with Netcomm disk and terminal program - auto or manual dialing - includes connections to C64/128 and phone \$45

Books - "Introducing Commodore 64 Machine Code" by Ian Sinclair (146 pages) \$15

"Data Handling of the Commodore 64 Made Easy" by James Gatenby (122) \$10

"Commodore 64 Programmer's Reference Guide" \$20

"Compute!'s Commodore 128/64 Collection" (286 pages) \$15

Official Comet Halley kit - Space Age Maths Games for the C64 - includes disk, flight chart, & Puzzle Cards \$12

All goods sent C.O.D. with postage/charges extra.

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Jeff Carey

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## CONTINUED FROM PREVIOUS PAGE

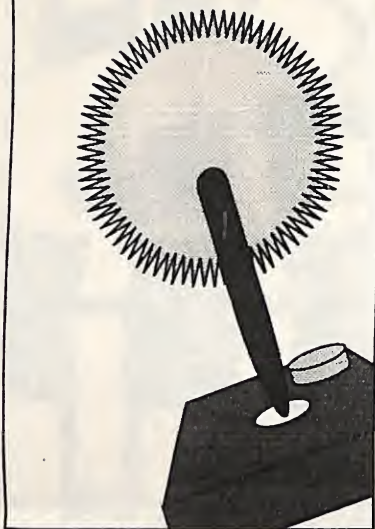
Naturally, the extra speed comes at an extra cost. For those users merely looking to chat and work around the message banks, the 9600 XR would be a nice but expensive and altogether unnecessary ego boost. For the file buff, however, it is a purchase which could pay for itself ten times over with the greater speed possible with this modem. Generally priced at under \$600, the Maestro 9600 XR is aimed more at the serious user than the recreational modemer but should be considered when looking for a first-time modem or an upgrade to a faster machine.

Maestro have certainly entrenched themselves within the telecommunications world, and these three peripherals are only a sampling of their collection of hardware. I feel that they represent a good cross-section of this Australian company's range, and to all those Commodore users who are interested in branching out into the world of modems I can say with conviction that the Maestro selection is well worth serious consideration.

*Artie's Note: The prices noted in this article are somewhat out of date, and are generally noted as prices for new Maestro modems. 2400 bps Maestro modems are in many instances selling second hand on the various trading echos and newsgroups for between \$50 and \$150. 9600 Maestro modems are being sold second hand in the \$250 range, whereas many other brands of modem are selling 14400 bps fax/modems for less than \$300.*



# Power Drift



Bonjour, tout le monde! J'avais retournée. And yes, Europe was - and probably still is - a great place. Full of wonderful people, C64s, friendly pubs, C64s, classy clubs, and even more C64s. The Commodore is thriving over there, and it was good to see that people are as involved as they always were. Let it not be said that Warren wasted his money!

So, what have you all been up to in my absence? Far too much, no doubt. I see that Warren put out one of his pet surveys, which should mean that all of you ranked The Power Drift as your number 1(0) column (depending on how he's worded the scheme this year). If not, we're out to change your mind. That's right, back into top gear for the rest of the year. What does this mean? Essentially, that all the things promised in the past are (finally!) going to be fulfilled.

## BATMAN

Remember that solution to Ocean's ol' Batman game that was mentioned some time ago? Well, I found it. Not Batman - The Movie, but the original which had people stumped for years. No longer! If you've been to hell and back trying to discover how to complete the game, then the complete, ultimate solution is as follows:

Move left, pick up false nose, move down, then left, pick up batarang, move right, right again, pick up lockpick, then right twice again and pick up the hand grenade. Go left, up, left, pick up the control disk, move up, pick up

the set of tools before going back down then left. Use set of tools, use the control fisk, move right, up twice, left twice, and pick up the door key. Move right five times to pick up the sweet, move right, pick up trainies (!), left, left again, climb up the side of the building, pick up rope, move right twice and use the lockpick. Enter door, use door key, enter door, move right, up, right, right, pick up lift key, left twice, down, stand on lift and use lift key. Go up, right, right again, down, left, down, left, pick up toast and dart, then right five times, pick up the games disk, go up, left, up, and pick up the fried egg. Now use the rope, climb up the rope, pick up the magnet, use dart, pick up the pass card, move down, right, down, right, down (getting repetitive, isn't it?), left thrice, up, right, up, left twice, and down. Stand on lift again, use lift key to go back up, up, right twice, down, right three times, down, left three times, down, left twice, climb down the side of the building, left nine times, climb back up the side of the building (what?! Again?!), move right twice, pick up lemonade, move right twice, pick up flashlight, go left four times, climb back down the side of the building, then right twice, and use the pass card. Now go up, use the flashlight, move left twice, pick up video tape, move right five times, up, left twice, use video tape, up, left twice, up, pick up the cupcake, right thrice, down, left, down, right twice, up, right twice again, up, left, up, pick up trumpet, right, and use the games

## Andrew Gormley

disk.

And provided that I've typed it all in correctly, you've solved the game! Congratulations for not giving up just when it seemed that you were going in circles. From my own experience, anyone who gets to the false nose without help has done better than I ever did. Oh, oh, and there are some general hints as well. Speaking of the false nose, using it gives you some measure of disguise so the nasty men don't spot you straight away. And again from personal experience, it does wonders for facial attraction.

Use the batarang, as this stuns enemies, or the food, which can restore energy. The magnet is a great little item, as it both stops the robots and gives you extra percentage points. The trainies, surprisingly enough, mean that you can run faster than you did before - or so Melissa Gainsford said. Provided that you use all of these wonderful items during the game, the final score should be greater than 99%. Hey, nobbad!

Of course, some of you people are just going to be lucky enough to have the tape version.

Really? Excellent - if you want the simple type of help, or merely prefer the sight of some machine code to my ramblings, then this is the one for you:

Rewind the tape, and enter the following listing:

```
10 FOR A=384 TO 432:READ
B:POKE A,B:NEXT A
20 SYS 384
30 DATA
32,86,245,169,32,141,92,3,169
40 DATA
147,141,93,3,169,1,141,94,3,9
6
50 DATA
173,89,1,201,32,240,4,173,5,2
20
60 DATA
96,169,169,141,89,1,169,1,141
,90,1,96
70 DATA
169,181,141,159,125,76,32,6
```

...and then type run and hit that play button. Once again, all problems ignored, you should have a fine time with that caped crusader and beat the baddies with a few "WHAM!"s...

## DAN DARE

Of course, you may not own Batman. Thousands don't. It's not a crime, but you probably won't be



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# Diagnostics Check-List

This is designed as a ROUGH guide to diagnosing faults with your 1541 and to taking the appropriate action

## Part #2

### Probable Chip

		2	9					3
		2	0	L				2
6	6	5	1	M		9	5	5
5	5	3	2	3	5	6	5	5
0	2	0	2	1	9	0	7	7
2	2	2	9	1	2	2	2	2

### Symptoms

### Possible Solution

Intermittant loading	Check ROM's								
	Check alignment								
No loading when drive is hot	Check ROM's								
LED flashes three times	ROM's								
Search with LED flashing continuously	ROM's								
No red LED during search	Check		X						
	Check logic gates, logic array			X	X				
Message: "File not found"	Clean drive head								
	Check 0 stop adjustment								
	Check alignment								
Drive fails to read	Check					X	X	X	X
	Check both +1.2v sources for the stepper output and the read circuit								
Drive fails to format disk	Check components related to connector P-7 (see later diagram)								
	Check		X						
	logic array								
Stepper motor fails to step forward	Check	X	X						
Drive speed unstable	Check DC motor								
No save function on heat-up	Check								
Lock up occurs on attempted load	Check serial port components								
	ROM								







arrested for it either. There is another game of the genre, however, which Big Brother perhaps should make it compulsory to own. Hey, the big guy might even play it himself. That's right, I'm talking about one of Virgin's biggest ever sellers - the immortal Dan Dare. Now, I'm sure a lot more of you own this one. Ah, but have you ever completed it? Did you ever get stuck on one of the puzzles? Ever drown near the reeds? Get thrown into the cells with your mates? Join the club. So, let's go through this one together and see what sense we can make of it...

Head towards the reeds, then cut them down. Enter the subterranean lake - just walk into it - and swim towards the left. Yep, the ol' use-the-reed-as-a-snorkel trick. You will hit a submerged crowbar. Pick this up and swim to your right until you come across a ladder. Climb up this, walk right until some steps appear. Enter the underground cave and walk left until you find two vines. Climb down the longest, cut off the one to your left and then tie it to the right one. Now you can climb down the extended vine to the ground, walk right, and when you come across the hatch open it with the crowbar and take the fruit before climbing back up the vine. At the top, walk right to a narrow passage and throw the fruit. This is where Stripy finally shows what he's good for. He'll chase after it and bring back a torch, which will be given to you. Climb back down the vine, enter the hatch, turn the torch on, exit the hatch, climb

back up the vine, cut it down, and then walk to the left vine and climb down as far as possible. Now tie the vines together, climb down again, and walk left until you find the hatch, which you should enter. Climb down a long ladder and walk right. There are three ladders with a Treen guarding a closed door. Climb down any one, use the crowbar to open the door, and then walk left. You will need to kill three Treens at least in order to obtain a special pass card. Keep heading down until you come across an unlit room, which means that you have to use your torch. Further down you will see two cells, from which your imprisoned friends can be set free by using the pass cards. Go back up to the unlit room, walk left past the large laser, keep left and you will see a complex with interchangeable mirrors. There are three main reactors hidden in here, and you have to change the mirrors so that when the cannon is fired, its beam will be deflected by the mirrors to the hole in front of the reactor. Check the map to see where the computers are, adjust the mirrors, and remember that you must destroy the reactors in order (there's a number of the side of each of them). When all three have been taken out, head towards the third computer where you will find that a door has been opened. Enter and head left, killing stray Treens on the way as you approach Mekon's den. Fire ten grenades in his direction whilst avoiding his laser fire, but once he has been destroyed you have only two minutes to escape! Should I tell you how? Nah, that'd spoil all

the fun... But there's a quick and simple way...

## COMPETITION WINNERS

So there you have it, the straight-up solutions to two of the Commodore's best puzzle games. But wait! There's more! No, not a free set of steak knives. (But if you want to send money, I'm not stopping you) Do any of you recall a little competition that was running some time ago? Perhaps? Some of you obviously did, anyway, which probably accounts for the stack of mail on the doorstep when I arrived home. Those two fine games - Ghostbusters II and Power Drift, kindly donated by Aaron Kernbach - were up for grabs. And they've been grabbed by...

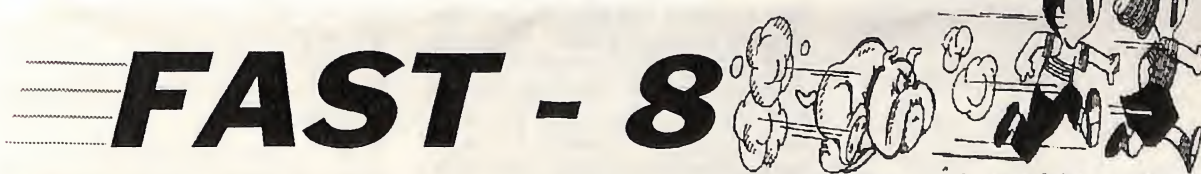
Simon Brown, of Bayswater in Victoria and Louise Kennedy of Manningham in SA.

Congratulations both of you, and I hope you enjoy the latest addition to your software collection. Not that I enjoyed giving them away...

ANYWAY... So I guess that wraps up The Power Drift for another month. It's been an exciting one indeed - certainly for you Dan Not-Quite-As-Daring gamers who never knew any other way from beating the heck out of those green Treens. Is there any more, you ask? Yes there is... in next month's issue. Mug your postie for it!

Cheers Andrew

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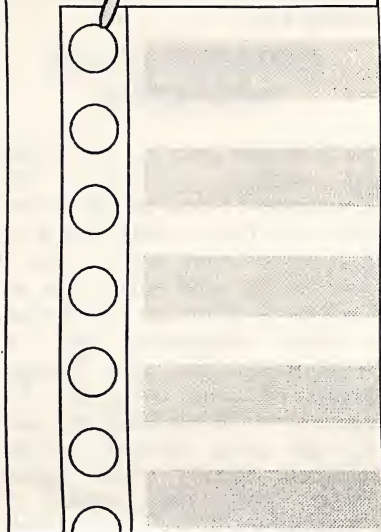
**Commodore**  
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**April 1995**



# Programmers Machine Code Column

Marc Walters



## ZERO PAGE

Zero Page is that almost mythical block of 256 bytes located at the very beginning of RAM and is the most valuable area of RAM available to the machine code programmer. Zero Page memory needs only one byte to be addressed since the high byte is always 0. The 6502 microprocessor takes advantage of this feature by allowing a number of commands, such as STA and LDA, to have Zero Page addressing modes, so instead of LDA \$00FB, another shorter and faster instruction can be used, ie, LDA \$FB. Memory locations \$FB to \$FE are left unused by the operating system for the exclusive use of machine code programmers while all other Zero Page locations are reserved for use by the operating system, but some of these are rarely used and can be utilised. Here is an incomplete list of locations that can be used, most without interference from BASIC unless the cassette or RS232 devices are accessed.

\$A3-\$A4 BASIC temporary data area  
\$A7-\$AB RS232 and cassette useage  
\$B4-\$B5 RS232 and cassette useage  
\$B6 RS232 out byt buffer  
\$F7-\$FA RS232 useage  
\$FF BASIC Temporary data area

## HIGH RESOLUTION BITMAP

Bitmap mode and BASIC has never been a very good partnership. The lack of any real graphics commands tends to

reduce BASIC programs to being a slow and complex mixture of math and POKE commands.

Machine code does offer the necessary speed, and since BASIC 2.0 uses math and POKE commands to use bitmap it is easy to do a direct translation of the BASIC code to a machine code equivalent.

For example, the BASIC line which turns on bitmap mode-

```
10 POKE 53265, PEEK (53265)
OR 32
```

can be converted to machine code as-

```
LDA 53265
ORA #32
STA 53265
```

and the BASIC for setting the bitmap screen base pointer-

```
20 POKE 53272, PEEK (53272)
OR 8
```

can be written as-

```
LDA 53272
ORA #8
STA 53272
```

The standard BASIC routine for plotting a pixel to the screen is also easy to convert but I'll leave that till next time. The next part of this article, although not aimed at the beginner machine code programmer, has some interesting routines that may be of some use.

## SINUS DOT PLOTTER

Before beginning, it is assumed the reader has some knowledge of the C64's high resolution bitmap mode.

Consider the word "Sinus". Just

another nasal condition to millions of ordinary, unsuspecting folk, but one of the most revered words in the world of PD demo programming. "Sinus", derived from "sine" is a term used to describe a display effect, usually found in demos, that uses objects such as sprites or single dots moving in smooth flowing movements based on sine wave patterns. Most modern demos feature at least one part with a variation on this theme. If you've ever seen those Lissajous patterns in math textbooks, or seen the "Curiosity Show" TV program when they suspended a funnel by some string from a frame and let sand pour from it while it was swinging around, creating a Swirly Pattern (that's the technical term) on the ground, then that's basically what I'm talking about. Anyway, this month we're going to create a sinus-dot plotter, that is, single points plotted on a bitmap screen moving around in a sinus pattern.

The concept of moving an object in a sinus pattern is simple, all that is needed is a table of sine wave values from which the object's X and Y coordinates will be derived. A simple sine table 11 units in height may look like this:

```
5,5,5,4,4,3,2,1,0,-1,-2,-3,-4,-4,-5,-5,-5,-4,-4,-3,-2,-1,0,1,2,3,4,4
```

If a reading of consecutive values, starting from the first element in the above table, is taken at regular intervals of time the values further from zero appear more often than those taken nearer the middle of the table. When updating an object's coordinates we take a value at regular intervals of time (eg every 50th of a second) for the X and Y axes, updating pointers to the next value, and so on. The example sine table could be used to give a sprite a swinging pendulum effect.

First we need to generate a sine table. A BASIC program can be used for this, and the table then stored to disk using a MC monitor. Type in the following program:

```
1 FORI=0TO255: PRINT" (HOME)" I
:POKE52992+I,50+INT(50*(SIN(I
*PI/128))*.5):NEXT:END
```

The table will be stored at \$CF00 to \$CFFF. Use a MC monitor to save it to disk. If you only have a memory based monitor that



resides at \$C000 then redirect the table to another area of RAM, save it, then use "LOAD ADDRESS" on your Commodore Test/Demo Diskette to change its load address to \$CF00.

The formula "SIN(a\*PI/b)" needs some explanation. Instead of worrying about using degree conversions, in which case PI's divisor ("b") would be 180, we just use a value exactly one half the number of elements the table will be made of. A table of 256 elements is used because 256 is the largest single-byte addressable number. We don't need a cosine table for the X axis because we can use the sine table for both axes by beginning the X-axis coordinate lookup halfway through the table.

We'll be plotting single pixels to a high resolution bitmap screen. To keep calculations fast and simple the X coordinates will be single byte, so not all of the width of the screen can be plotted to, only 256 pixels across rather than the usual 320 pixels.

The main plot routine will be fed an X and Y coordinate then will draw the pixel. The routine uses data tables to derive the exact byte position and pixel mask for the plot, in fact, no calculations are done by the plot routine, which makes it very fast and efficient. Much of the program consists of routines to create the data tables used by the plot routine, which is itself only ten instructions in length.

Okay, limber up those fingers and begin typing. This sourcecode is from "6510+ Assembler" but it should be easy to convert to most other assemblers. If you are using a MC monitor for code development (yuck!) then I'd advise getting hold of a good assembler such as the "6510+". After each significant section of code there'll be an explanation and relevant comments.

```
1000 *=$C000 ;START AT 49152
1010 ;
1020 BITMPOS=$2000
1030 TLBITM=$2000+(4*8)
```

;TLBITM defines the top left of the area of bitmap covered by the coordinate system which is 256 pixels wide. This is just to centre the display area rather than having it against the left screen border.

```
1040 YLOTAB=$CB00
```

```
1050 YHITAB=$CC00
```

;The lo/hi byte lookup tables for the Y-axis. The value for coordinate 0 would be TLBITM (\$2020), for a Y coordinate of 1 would be TLBITM+1, for a Y coordinate of 8 it would be TLBITM+320, etc.

```
1060 XTAB=$CDC0
```

;XTAB is structured like 0,0,0,0,0,0,0,1,1,1,1,1,1,1,2,2... etc up to 39. These numbers are added to the Y table value to obtain the exact byte in the bitmap area the X/Y pixel position is located in.

```
1070 XMASTAB=$CE00
```

;This table hold the pattern 128,64,32,16,8,4,2,1,128,64,32,16,8,4,2,1...etc. This is used to fetch the actual value to be logically ORed to the byte corresponding to the X/Y pixel position.

```
1080 SINETAB=$CF00
```

;Here sits the 256 byte sine table.

```
1090 BORDER=$D020
```

```
1100 XDOT=$A7
```

```
1110 YDOT=$A8
```

;XDOT and YDOT store the X and Y pixel position of the pixel to be plotted. These and the following reserved bytes are all located in the Zero Page because operations on Zero Page locations use less memory and processor time.

```
1120 DOTCNT=$A9
```

;Location \$A9 is used to hold a decrementing counter of the total number of pixels to be plotted.

```
1130 XDPOS=$F7
```

```
1140 YDPOS=$F8
```

;XDPOS and YDPOS are used for temporary storage of pixel coordinates.

```
1150 ;
```

```
1160 DOTNUM=48
```

;This is the total number of dots to display. Remember that DOTNUM is used as a constant, NOT as a location to store variables. Change the number of dots by altering this line.

```
1170 XSPD=1
```

```
1180 YSPD=1
```

These are the steps at which the sinus pointers move through the sine table.

```
1190 XSTEP=9
```

```
1200 YSTEP=8
```

;These are the distance between each dot along the sine table.

```
1210 ;
```

```
1220 SEI
```

```
1230 JSR SETBITM
```

```
1240 JSR CLRBITM
```

```
1250 JSR MAKETAB
```

```
1260 JMP MAIN
```

```
1270 ;
```

```
1280 SETBITM LDA $D011
```

```
1290 STA HOLD
```

```
1300 ORA #32
```

```
1310 STA $D011
```

```
1320 LDA $D018
```

```
1330 STA HOLD+1
```

```
1340 ORA #8
```

```
1350 STA $D018
```

```
1360 RTS
```

;Bitmap mode is enabled and the screen located at \$2000 (decimal 8192). The original values in \$D011 and \$D018 are stored.

```
1370 ;
```

```
1380 CLRBITM LDA #0+16
```

```
1390 LDX #250
```

```
1400 SCLRLLOOP STA 1023,X
```

```
1410 STA 1023+250,X
```

```
1420 STA 1023+500,X
```

```
1430 STA 1023+750,X
```

```
1440 DEX
```

```
1450 BNE SCLRLLOOP
```

;Bitmap colour is set. Bitmap uses the text screen memory for its colours, the 4 low bits of screen memory hold the background colour and the upper 4 hold the foreground colour of the corresponding 8\*8 pixel sized area on the bitmap screen.

```
1460 ;
```

```
1470 LDA #<BITMPOS
```

```
1480 STA $FB
```

```
1490 LDA #>BITMPOS
```

```
1500 STA $FC
```

```
1510 LDA #0
```

```
1520 TAY
```

```
1530 LDX #32
```

```
1540 BCLRLLOOP STA ($FB),Y
```

```
1550 INY
```

```
1560 BNE BCLRLLOOP
```

```
1570 INC $FC
```

```
1580 DEX
```

```
1590 BNE BCLRLLOOP
```

```
1600 RTS
```

;This section of code clears the bitmap screen. Note how it is cleared in 256 byte chunks by using zero page indirect indexed addressing, and the .Y register is used as a pseudo low byte while the .X register serves as a block counter. This is a fast, efficient method of using the indirect indexed mode.

```
1610 ;
```

```
1620 MAKETAB LDA #<TLBITM
```

```
1630 STA $FB
```

```
1640 LDA #>TLBITM
```

```
1650 STA $FC
```

```
1660 LDX #0
```

```
1670 LDY #0
```

```
1680 MTL CLC
```

```
1690 TYA
```

```
1700 ADC $FB
```

```
1710 STA YLOTAB,X
```

```
1720 LDA $FC
```

```
1730 STA YHITAB,X
```

```
1740 INY
```

```
1750 CPY #8
```

```
1760 BNE MTCONT
```

```
1770 LDY #0
```

```
1780 CPX #199
```

```
1790 BCS MTCONT
```

;This important routine creates the various data tables used by the pixel plot routine.

Note that the Y coordinate value is calculated to stay the same if the coordinate is over 199, otherwise the pixels would overflow into RAM beyond that used by the



## bitmap.

```

1800 CLC
1810 LDA $FB
1820 ADC #<320
1830 STA $FB
1840 LDA $FC
1850 ADC #>320
1860 STA $FC
1870 MTCONT INX
1880 BNE MTL
1890 ;
1900 LDX #0
1910 MTL2 TXA
1920 AND #7
1930 TAY
1940 LDA XMASK,Y
1950 STA XMASKTAB,X
;Using a small table of
values to create a large
table.
1960 TXA
1970 AND #248
1980 STA XTAB,X
1990 INX
2000 BNE MTL2
2010 RTS
2020 ;
2030 XMASK BYT
128,64,32,16,8,4,2,1
2040 HOLD WOR 0
2050 ;
2060 PLOT LDX XDOT
2070 LDY YDOT
2080 LDA YLOTAB,Y
2090 STA $FB
2100 LDA YHITAB,Y
2110 STA $FC
2120 LDY XTAB,X
2130 LDA XMASKTAB,X
2140 EOR ($FB),Y
2150 STA ($FB),Y
2160 RTS
;Yes, that's all there is to
the plot routine! The EOR
(Exclusive OR) command is
used because it allows the
plot routine to be used to
both plot and erase dots. If
one dot is plotted directly
over another they will both
be erased. Understandably
this does introduce the
possibility of closely grouped
sinus patterns erasing
themselves, the decision to
use EOR was a compromise to
shorten the overall length of
the program.
2170 ;
2180 EXIT LDA HOLD
2190 STA $D011
2200 LDA HOLD+1
2210 STA $D018
2220 LDA #147
2230 JMP $FFD2
;Restore original $D011 and
$D018 values then do the
equivalent of BASIC's PRINT
CHR$(147). JUMPing to a
subroutine means that an RTS
immediately after isn't
needed, thus saving one byte.
2240 ;
2250 XDSP BYT 0
2260 YDSP BYT 64
;The starting positions of
the X/Y axis sine table
pointers. These are not used
frequently so there is no
need to place them in Zero
Page.
2270 ;
2280 SINPLT LDA #DOTNUM
2290 STA DOTCNT

```

```

2300 LDA XDSP
2310 STA XDPOS
2320 LDA YDSP
2330 STA YDPOS
;XDSP and YDSP change once
per main loop while XDPOS and
YDPOS change for each new
pixel plot.
2340 SINLOOP LDX XDPOS
2350 LDA SINETAB,X
2360 STA XDOT
2370 LDX YDPOS
2380 LDA SINETAB,X
2390 STA YDOT
2400 JSR PLOT
;Plot each dot using its X
and Y coordinates.
2410 CLC
2420 LDA XDPOS
2430 ADC #XSTEP
2440 STA XDPOS
2450 CLC
2460 LDA YDPOS
2470 ADC #YSTEP
2480 STA YDPOS
;A step value is added to
each new dot position. Large
steps space dots out along
the respective axis while
small steps make the dots
close.
2490 DEC DOTCNT
2500 BNE SINLOOP
2510 RTS
;This sinus routine may be
hard to understand at first,
so read it several times.
Once you have seen the sinus
effect it produces the
routine will become easier to
understand.
2520 ;
2530 MAIN LDA #255
2540 MLOOP1 CMP $D012
2550 BNE MLOOP1
2560 INC BORDER
2570 JSR SINPLT
2580 DEC BORDER
2590 LDA #50+100
2600 MLOOP2 CMP $D012
2610 BNE MLOOP2
2620 INC BORDER
2630 JSR SINPLT
2640 DEC BORDER
;This is the main program
loop. At raster position 255
(bottom of the screen) the
sinus routine (SINPLT) is
called to plot the dots
before the TV/Monitor
actually displays the bitmap
screen. The program then
waits till after the dots
have been displayed and the
raster is at raster line 150
then runs the sinus routine
again, the dots are plotted
at exactly the same positions
as where they were first
drawn, but the use of EOR in
the plot routine erases the
pixels.
2650 ;
2660 CLC
2670 LDA XDSP
2680 ADC #XSPD
2690 STA XDSP
2700 CLC
2710 LDA YDSP
2720 ADC #YSPD
2730 STA YDSP
;After the pixels have been
plotted then erased it is
time to change the initial
position of the main pointers

```

```

(XDSP and YDSP) along the
sine table.
2740 ;
2750 LDA $DC01
2760 CMP #SEF
2770 BNE MAIN
2780 JMP EXIT
;If SPACE is pressed program
control is passed to the exit
routine.

```

When you've finished typing the program in, save it! Now do a test assemble. Once it works fine and you're sure there are no typos save the machine code with the MC monitor if you're using "6510+" or use the assemble-to-disk option available on most other assemblers. Be sure the sine table is present at \$CF00 and type SYS 49152 to execute the program. The result should be a black screen with an almost closed circle of dots spinning around. Cool or what!? By changing the XSTEP and YSTEP values different patterns are created. If these values are the same then a circle is made. If one value is half the other a weird loopy thing is made. If the values are small the dots will be close together. Really nice effects can be made by moving only one axis, that is, give either XSPD or YSPD a value of 0. You'll have to experiment to find many of the good effects but I'll list some I found-

Effect#	1	2	4	5	6	7
XSPD:	001	001	002	002	001	001
YSPD:	002	001	000	000	002	001
XSTEP:	213	002	008	006	004	009
YSTEP:	043	043	007	006	004	008

So far we've been making a rather simple sinus effect. Hmmm, what would happen if we were to splice two different sine tables together? The following BASIC program does just that. Type it in then RUN it. It will create a spliced sine table at \$CF00 to \$CFFF. Save it as before and simply use it in place of the old sine table.

```

1 Z=0:FOR I=0 TO 255:PRINT" [HOME]"I
2 A=60*INT(30*(SIN(I*PI/128))*.5)
3 B=INT(20*(SIN(Z*PI/128))*.5)
4 C=A*B:Z=Z+2:IF Z=>255:Z=256-Z
5 POKE 52992+I,C:NEXT:END

```

This is just one way of cramming two sine tables into one and I'm sure someone can come up with a better program to do it. Some very nice patterns can be made using this new sine table, try these new values in the Sinus Dot Plotter program-

## Sample Double-Sinus Settings

Effect#	1	2	3
XSPD:	001	001	000
YSPD:	000	000	002
XSTEP:	011	007	007
YSTEP:	011	006	004



The first effect is one of the most common double-sinus patterns, an example can be seen on page 14 of the December 1994 issue of Commodore Format. The second effects' pattern is a sort of Twisty DNA Thingy (tm) that wouldn't look out of place hovering menacingly off the USS Enterprise's starboard bow.

When increasing the number of dots by altering the constant named "DOTNUM" remember that the screen will start flickering if over 60 pixels are used. It's bearable if the lines INCing and DECing \$D020 in the main program loop are deleted as their only purpose is to visually indicate how much processor time is being used. There is one other effect I should mention. Set DOTNUM to 0 (which means 256 dots will be plotted) and delete line 2630 (JSR SINPLT). By deleting this second SINPLT not all the dots will be erased. Use the settings for the Double-sinus effect 1. Try it!

The program can be made faster by having a separate UNPLOT routine that puts a zero into the bitmap byte rather than EORing it with a mask value. Unrolling the SINPLT loop, ie, putting the PLOT routine within SINPLT rather than as a subroutine, will speed things up considerably.

Please feel free to send in any improvements to both the Sinus Dot Plotter program and the BASIC sine table creator.

Finally, I'm happy to answer any machine code queries, and can supply a comprehensive package of machine code tools and information such as the 6510+ Assembler, photocopied instructions, memory maps, tutorials, linkers, graphic editors etc, on request (Please include \$4 in stamps to cover disk, photocopy and P&P costs).

Address any correspondence to:

**M. Walters**  
**32 Renfrew**  
**Crescent,**  
**Edgeworth**  
**NSW 2285.**

## Supercalc on the C128

A professional spreadsheet program, flexible and full of features, allowing up to 254 rows by 63 columns of data, user-friendly and very similar to Lotus 1-2-3 in its operation, very reliable, and useful in a wide range of tasks -- SuperCalc. And it runs on the Commodore 128!

In common with WordStar, dBase, and a few others, SuperCalc is a program that began life in a CP/M version, has continued through a series of versions for the IBM and compatible computers, and is still being sold and widely used today. Naturally, it is the CP/M version that is able to be used on the C-128. My copy is actually version 1.05.

This review is not the place to describe what a spreadsheet is and what it does generally. In brief, it is a program which lets the user work with numbers in much the same way as a word processor lets you work with words. You can look at information, alter it, delete it, or replace it, all with a few easy-to-learn commands. Subject to your control, the program will recalculate any values affected by new, modified, or updated data that you may enter. In a way, SuperCalc operates like a business or scientific calculator. The primary difference is that SuperCalc has a very large memory, and can remember both equations, and the data which has been entered.

CP/M screens are generally not very pretty or fancy, but the SuperCalc screen is very

functional. The top and left margins simply have the column and row designators and a line which separates them from the workspace. The "cursor", which marks the active cell is an underline, and this is moved around using the cursor keys.

SuperCalc is a little different in that the status, prompt, and entry lines are at the bottom of the screen rather than the top. You very soon get used to this, however. The status line shows the name of the currently active cell, and the direction the cursor will move after data entry. The prompt, or secondary status line shows the current cell width, the amount of memory still available, and the last cell used in the current application. In command entry mode this line displays the options available at any given time.

The command structure is a typical spreadsheet arrangement, with entry to it initiated by the slash (/) key. At the first stage, the prompt line shows only the initial letter of the command options available -- B, C, D, E, F, G, I, L, M, O, P, Q, R, S, T, W, X, Z, ?. This is quite daunting, so thank God for the ?, which will display a help screen! You soon learn what the letters stand for, however. At the next level the prompts are much fuller and it is hardly necessary to remember what they stand for.

People sometimes question why a 128 user would bother with CP/M programs when there are plenty of pieces of good software available



for the native 128 mode, not to mention 64 mode. In the case of spreadsheets, the 128 mode programs are not as professional as SuperCalc in my opinion. And for anyone who uses, and is familiar with, Lotus 1-2-3, or one of its clones, like Quattro, or the IBM version of SuperCalc itself, there is a definite advantage in using a CP/M program which is so very similar. Another big advantage is the ease with which spreadsheets can be transferred from CP/M disks to those of IBM format, and the fact that a SuperCalc spreadsheet can be incorporated into a WordStar or other word processor document in CP/M mode or on an IBM.

CP/M programs which are still around today are generally in a form which was produced for a particular computer (Kaypro, Osborne, Epson, and so on) and which may or may not require modification to run on the 128. I obtained an Osborne version of SuperCalc from a liquidation sale, which was a good purchase because it came with an Osborne 1 handbook containing full manuals for SuperCalc and WordStar along with much other useful information. But SuperCalc did need some modification as far as its screen display was concerned. The Osborne 1 screen was only 52 columns wide, which looked kind of narrow on the 80 column 128 monitor. But even more disconcerting was the fact that the

cursor was invisible! -- the only way of knowing which was the active cell was by looking at the status line at the bottom of the screen. To make a long story short, I had to access the program with a disk monitor to find where the screen code for the underline cursor was located, and then change that to what was appropriate for the 128 screen. The installation program supplied with the Osborne 1 version of SuperCalc does not work on the 128; but that is because it depends on the CP/M program itself being version 2.2, rather than the version 3.0 which is supplied with the 128.

For printing out spreadsheets, SuperCalc does not have a great deal of flexibility, although it has the means for sending printer codes before the data is output. I am able to set margins and print size and style on my printer, so I generally fix everything there first before getting the output from SuperCalc. However, I have also taken the option of transferring the output to WordStar and then utilising this programs formatting codes to prepare the spreadsheet for printing.

SuperCalc does not call for a great deal of disk drive access during its operation. In this it is better than some other programs like dBase 2 and even WordStar. The program itself consists of just a .com file and one .ovl file. I have these load automatically into my REU which

functions as drive M: in CP/M mode - this makes all disk access virtually instantaneous. The feature which causes the most delay with SuperCalc is the time taken to rewrite the whole screen. If you try to move around a spreadsheet column by column, and the cursor is constantly at the edge of the screen, movement becomes quite tedious. It is a far better practice to jump straight to where you want to be so that only a single screen rewrite occurs for each move. This is a problem with the implementation of CP/M on the 128 rather than with SuperCalc itself, but a lot of moving around on a spreadsheet does make it more obvious than it is with some other programs. When entering data it is best to keep automatic recalculation off, as this can slow down the movement from one cell to the next.

As an example of what SuperCalc can handle, I have been using the program regularly for almost three years in keeping the income and expense accounts for the management of a household of six people, and found it to be quite adequate for this. I have started a new spreadsheet at the beginning of each financial year, so that the sheet grows to its maximum size over a period of twelve months. SuperCalc starts the spreadsheet with 30k of memory available, and I have not exceeded that as yet.

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# Expanding Horizons

23

E. Gordon Wormald

Commodore disk drives type 1541 and 1571 each use 5 1/4 inch DD (Double Density) diskettes, providing input/output facilities for a C64 or C128 computer via its Serial Bus. The 1541 can read and write on only the bottom side of its diskette (unless the diskette is turned over to form a "floppy"), but the 1571 can access either side by selecting its lower or upper read/write head. Consequently the 1541 can handle 664 blocks (ie. 166K) of filed data without changing the diskette, whereas the 1571 can get to 1328 blocks (332K). The 1541 or the 1571 lower head writes clockwise on its surface, but the latter's top head writes anticlockwise.

The 1571 is arranged so that it can read and write in 1541 mode as an alternative to its "native 1571" mode. Compatibility requires this to use the lower head. Reverse compatibility allows a 1541 to read files from the first side of any 1571 diskette (unless they extend over to the second side), so a 1571 first side is configured very much like a 1541 side. In particular, it uses the lower head and its Directory track 18 obeys almost the same protocol. DOS commands U0>M0 or U0>M1 change from 1571 mode to 1541 and vice versa, respectively. Of course, if your operating system does not give access to naked DOS commands like these, they should be built into a command string like:

```
OPEN 15,8,15,"U0>H0":CLOSE 15
```

Since each side of a floppy is written clockwise (face view, moving anti-clock over the head), whichever side happens to be uppermost is scanned anti-clockwise; and consequently a 1571 cannot use its upper head to read it. Similarly, a 1541 cannot read the second side of a turned-over 1571 diskette.

However if there is a need, the 1571 while in 1541 mode can interchange its heads and so write

## The 1541/1571 Connection

a second (but anti-clockwise) 1541 side to the diskette. Like the floppy, this "mirrored" diskette holds two 1541 sides, BUT a 1541 can only read one. So why do it? The consequent ability to hide files from a 1541 must be trivial, but to be able to treat a 1571 as holding two (selectable) 1541 diskettes simultaneously could have useful possibilities. To be frank though, it would be rare for this to have any advantage over 1571 access to both sides. For those wishing to experiment, the DOS commands U0>H1 or U0>H0 change from the first and second sides respectively. Build them into a command string as above if necessary.

For most purposes 1541 and 1571 drives are interchangeable, with 1571 DOS acting as a superset of the 1541's, although normally the speed advantage of C128/1571 working is lost for C64/1541 work. There can be problems if a C128 is put into 64 mode without resetting the 1571. The drive controller and the C64 can be locked up by direct-access software such as copiers, fast loaders or copy protection, until reset. Such problems are avoided by putting a C128 into 64 mode at

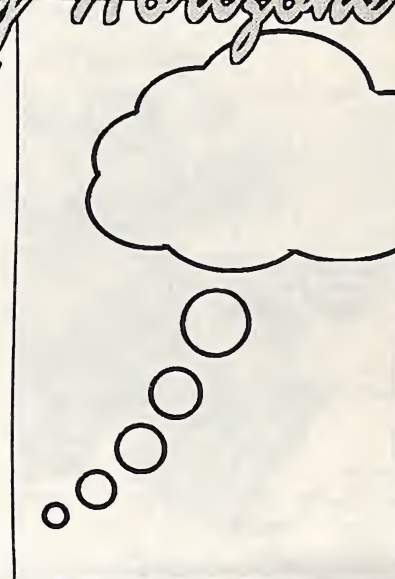
power-up with the Commodore key pressed, or from a C64 cartridge. Otherwise use U0>M0.

Validation (COLLECT on the C128) can raise problems. Using a 1541, or 1571 in 64 mode, a 1571 disk with data beyond the first side will abort due to track numbers above 35 being regarded as illegal. Use 1571 COLLECT.

If data has not reached the second side, validation on a 1541 (but NOT 64/1541-mode on a 1571) will change Byte 4 of Track 18 Sector 0 (to 0) so that the disk becomes single-sided 1541.

Ordinary 1571 COLLECT (or 1541 VALIDATE) will make any auto-boot sector unusable. There are ways around this; discussed later.

Aside from the differences described above, both the C128 and 1571 carry refinements to allow facilities beyond those provided by the C64 with 1541. The serial interface allows much faster data throughput, and non-Commodore disk formats can be read and written. Power-up autobooting from either a 1541 or 1571 disk drive can be performed by the C128.





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# 1541 Diagnostics

Neville Thorburn



Hello again, and welcome back to the second installment in this series. I hope the first diagnostics check list went down well, and that this and future installments of the chart are of assistance. Personally, I am not a great one for such things, but they do fill a need, and can prove invaluable in identifying faults quickly. Please note that each installment of the chart will cover only one side of each sheet. This is done so that you have the option of pinning the sheet above a work bench or such like, as is your wish, with all the information still readily accessible at a glance.

## PREVENTION IS BETTER THAN CURE

OK, let's get on with our article. First off this month, we will take a look at some basic strategies to help ensure a longer useful life for your drive. Most are just plain common sense, and are pretty widely known but bear repeating time and time again.

1) Take care of your disks:-

ALWAYS store them in their jacket, only use felt-tip pens to write on labels attached to disks, ensure that a disk is not bent or physically damaged during handling, and keep them well away from strong magnetic fields. Well looked after and maintained media ensure that your drive will be allowed to function at its most efficient with minimal wear and tear.

2) Place your drive well away from anything that creates "noise" or "static".

3) DO NOT stack drives one upon the other, or inhibit the air flow around a unit. HEAT is a major cause of drive failure.

4) Periodically clean your read/write head with 90% isopropyl alcohol and a clean cotton swab. Ensure the load pad is not excessively worn, and clean this as necessary.

5) Minimise the use of commercial programs whose copy protection schemes cause an excess of head-knocking. If you MUST use these programs, use back-up copies of your

LEGALLY PURCHASED software that have been completely stripped of their protection, or take advantage of one of the many DOS-wedge programs that disable head-knocking before loading these commercial offerings.

Personally, some of these recommendations seem a little dubious, but, since they can't do any harm, let's err on the side of caution. Naturally, all things electrical and mechanical will eventually break down, but by taking these few simple precautions with both your media and the drive itself, you can certainly extend the longevity of your equipment.

## Part 2

### THE 1541 - AN OVERVIEW

The 1541 is an independent memory device composed of several main components. These components are: A media clamp rotating mechanism which clamps the media and rotates it at a specified speed, a head positioning mechanism to move and place the read/write head in the desired position to access data stored on the media, and an eject mechanism.

All positioning operations, except for the actual insertion and removal of disks, are controlled via the internal guide mechanism. By closing the front door, the media clamp is activated, first centering, and then clamping your disk into position between the spindle and the hub. Both the spindle and hub rotate at a speed of some 300 r.p.m. through a closed loop control circuit utilising a direct current motor/tachometer. The relationship between the read/write head and the media MUST be maintained correctly during disk operations, and, for this reason, a pressure pad is

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employed to hold and press down the disk with a weight of about 12 grams. The read/write head accesses the underside of the disk, so this pressure ensures a good contact between the media and the head occurs.

Our head assembly is coupled by a metal band to a four phase "stepping" motor. This motor performs the track positioning of the head, with a singlestep corresponding to movement over one half a track. The control circuit on the logic board controls the direction and the number of steps across the disk's surface that the head takes.

the spindle drive motor operates on 12 VDC and turns our spindle via a belt drive at 300 r.p.m. also. Its speed is controlled through feedback from the tachometer, which can be found within the drive motor assembly. This feedback signal controls a servo amp supplying the 12 VDC drive current.

## A LOOK AT A FEW COMMON PROBLEMS

The most common causes for concern with the 1541 drives are drive misalignment and, far more rarely, a major variance in disk rotation speed. Both these faults are, fortunately, very much within the capabilities of most users to rectify. But what exactly is "drive misalignment" and "rotational speed variance"? What can cause these to occur? Well, let's have a brief look at both.

To more easily explain what misalignment is, it is perhaps helpful to understand just how information is stored on our disks.

When initially purchased, diskettes have no data whatsoever recorded on their surface. They are completely and utterly useless to any computer system until, that is, they are formatted.

A disk drive, any disk drive, whether it be for a Commodore, IBM, Amiga, or whatever, requires certain information be pre-recorded on a disk to inform the drive controller of exactly where data is stored on that disk.

If this information were not present or located in a location other than that expected by our machine, errors would occur and the disk would be inaccessible. By formatting your disk, you are writing the needed data to exactly those locations expected by your system, thus allowing it to keep track of where data is stored, and where it can write new data on the disk's surface in future.

When a format is performed, our drive's controller really has no idea where the read/write head is located. It therefore assumes a worst-case scenario, and steps the head outward several positions until it has attained the outermost track, known as track one. At this stage, it encounters a "stop" which keeps the stepper motor from turning any further. This contact between head and stop causes the loud rattle so often associated with a format.

As the disk spins, the information required is recorded to disk in ever-decreasing circles, termed tracks. These tracks are further divided into sections known alternately as sectors or blocks, with each of these containing marks to indicate the start and end of the sector, the disk ID, the track/sector number, 256 bytes of data - initially all zeros until something is recorded, and a checksum. Once a track has been completely built, the read/write head is moved inward a single step and begins to construct the second track. This procedure is repeated until the innermost track, track 35, is finished, and the disk is completely formatted.

When the time comes to begin writing useful data to your newly formatted media, the drive controller is now able to locate the head over the relevant track and sector by precise fractional turns of the stepper. This pre-recorded data allows the drive to identify when the heads are in the correct position for data retrieval.

Once a sector is written to, the controller marks it off as used in a table called the BAM (Block Availability Map). By this means, the controller can keep track of the sectors used, which sectors go to make up a single file, and which ones are available for future use,

allowing effortless and trouble free recording and recall of data.

If, on a later attempt, problems are experienced accessing the disk, the most probable cause is that the stepper motor has positioned the head slightly off a track's center. Unfortunately, our 1541's have no way to compensate for this, even though they will try, and an operation abortion will result.

This mispositioning of the read/write head is termed "misalignment".

Mechanical fault is the most common cause of this problem, with the head/stepper motor assembly being the major culprit. This sort of misalignment can be the result of a number of problems, the most common being the action of the stepper motor banging against the head-stop. Another major cause is a lack of air circulation which can cause the mechanism to warm to the extent that it expands. If a drive is nearing misalignment, this expansion can be sufficient to render the device inoperable for all intents and purposes. Heat can also reportedly cause the pulley to expand at a rate greater than that of the stepper motor shaft, thus loosening the pulley. I have yet to experience this, and I suspect that, should conditions be this severe, the drive would be well past due for failure.

Failure to read a disk does not, however, necessarily mean that the drive you are currently using need be at fault. The problem could well lie with the drive used to save the data to the disk (if the file was saved on another drive). If that particular drive were misaligned, it would be writing data off-center and, when it came time to access it using a properly aligned drive, all the symptoms of a misalignment would present themselves.

Similar symptoms can also occur should the head-stop fail to stop the head in its proper position. In this instance, a disk will be formatted with tracks skewed either up or down. This is an extremely rare occurrence, caused by a loosening of the screws which hold the head-stop in place and the resultant movement



caused by recurring severe head-knocking. The best way to avoid this is to quite simply ensure that those screws are tight.

There are other causes, of course, including bend head guides, loose stepper pulleys, worn bearings, obstructions, dust, etc., etc.. Any of these can and will interfere with head movement, and thus has the potential to cause misalignment.

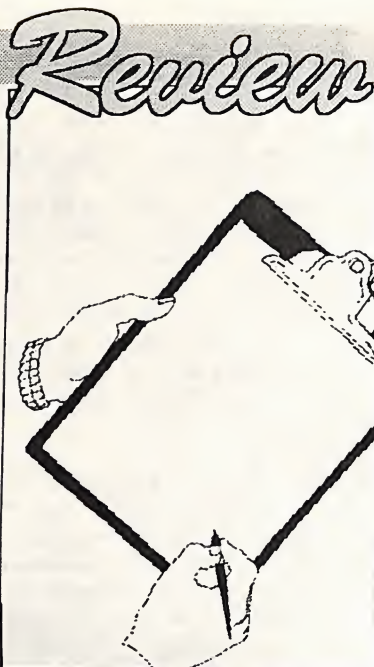
## ROTATIONAL SPEED

Although no where near as common as misalignment, an incorrect rotational speed can be a troublesome fault. As with all things, the passage of time takes its toll, even on the tough old 1541.

Unlike humans and their propensity to slow down as they get older, 1541's actually tend to get FASTER! This does no harm up to a point, but, eventually, this deviation of speed may be sufficient to begin to cause some problems, specifically, read/write errors. These are often mistake for the symptoms of misalignment.

Persistent read/write errors should always be put down to misalignment, at least initially, but it does pay, especially with older units, to check for drive speed problems as well.

If the errors are caused by speed deviation, it is a simple matter to adjust the drive speed. all you will need is a small flat-head jeweler's screw driver or similar. Disassemble your drive, removing the plastic case completely, flip the internal components over, ensuring that the drive door faces you, and locat a small hole on the left-hand side of the unit, towards the front. Inside you will find a small screw. On some drives, there will be calibration marks next to the screw, whilst on others no calibration is visible. This little screw is used to adjust our disk motor speed, but be warned, it is VERY sensitive, so any adjustment needs to be only miniscule.



In a time where hardcopy magazines for the 64/128 seem to be disappearing, it is good to know that several are still around.

With the demise of "RUN" and "COMPUTE" GAZETTE" magazines it seemed to most of us here in Australia that U.S. publishers had given up on our 8-bit machines. But this is not necessarily the case. "dieHard" began in 1992 and now has a subscription base recently reported in Loadstar to be 13,000 world wide.

dieHard, the Flyer for the Commodore 8biters is published 10 times yearly. Its cover price is US\$2.95 or by subscription for Australian users for US\$24.97 for 10 issues. Hopefully Australian readers will soon be able to buy dieHard through a local distributor.

dieHard is just what its title says, a flyer for Commodore 8biters. The Jan/Feb 1994 issue, my review copy, is sub titled "Killer Geos Issue". Each issue comes packed with information to make your Commodore work better for you and help you keep up-to-date in the Commodore world.

This issue, Vol 3 No 1 Issue 17, is dedicated to Geos.

"View from the Underground" is Brian L. Crosthwaite's editorial. He is the Editor-in-Chief and in this issue he talks about his own experience with Geos. He starts off by saying "... many people love Geos. Many hate Geos. It seems to be a black and white

John Buckingham

## dieHard

issue. I have never met anyone who said 'Geos is OK'. It's either the greatest thing since canned beer or worse than bathing in a mosquito pond!" He then goes on to relate both sides of the story finishing off by telling us that the magazine is produced using Geos and the popularity of Geos is shown in the fact that the most requested back issue of dieHard is the geolssue produced in November 1992 (Issue # 5).

"Input;Reader\$" is dieHard's Letters to the editor section and this issue has three letters touching on a variety of subjects.

"Rarities" is a section that contains short articles about different 8-bit products available usually pertaining to that particular issues theme. This edition includes information about the Geos Handbooks produced by our own Geos Genie Jane M Jones.

"Oops!" is a small section with corrections or additions to previous months type in programs.

A full page is taken up by "geoTips", which as the name says is hints and tips for the Geos user.

"Basic Basic" looks at the three programs Becker Basic, Geobasic and geoProgrammer which are all programs that can be used to develop and write Geos compatible programs.

"Geos Meets Laser" is an interesting article about how we can use our 8bit machines together with geos and print high quality documents with a laser printer. It



talks about geoWrite and geoPublish using LW Fonts, a Postscript cartridge and a geoCable with a laser printer to get terrific printouts. I found this two page article very, very interesting (I now know that I need a laser printer!).

The next article is called "Commodore's Postscript Revolution", which talks about Postscript and laser printing. It makes a statement that Postscript can put the impossible on paper. After reading this article I've already put my Christmas order in for a laser printer with a built in Postscript interpreter.

"To buy or not to buy" is a short article about whether to join the revolution and buy a laser printer. Dale Sidebottom, the author, suggests that every Commodore club in America should make laser printing available to its members. He suggests that we all go out and try a laser printer comparing our geoWrite files printouts. It seems that everyone in the States wants a laser printer.

R. J. Smulkowski's column "CYBERSPACE COWBOY" is a column devoted to BBS news.

"TELECOMMUNICATIONS, YOUR COMMODORE AND YOU" is an ongoing article talking about all aspects of BBS'ing. This month it talks about some different terminal programs including CCGMS, Nova Term, Desterm and Dialogue 128.

The Review section in this issue gives us an inside look at geoCANVAS 128 V3.0 and geoShell v2.2. GeoCANVAS is an 80 column only paint program which has the power of geoPaint but with a great many more options than are available through geoPaint. GeoShell, by Maurice Randall, is a program that can

replace your Desktop with a faster, easier and expandable personalised environment, sort of your own personal designed desktop.

"TRADERS CORNER" is the readers' classifieds column.

An article called ARCHAIC COMPUTER, the Computer Store of the Past, gives us a brief history and review of the 128D.

"??Q?Q??" is dieHard's question and answer section. This edition's questions all pertain to Geos.

"DOS & DON'TS" by Jimmy Weiler is reprinted with permission from Loadstar. It is a small excerpt taken from The Complete DOS and DON'TS which is available on disk from Softdisk, Loadstar's publishers. It is a short tutorial on writing REL files.

The final few pages of the magazine is taken up with five type-in programs. PIE (C64) is a program that will draw pie charts on the HIRES screen of the 64. HIRES BASE is an empty skeleton to which you add code which enables you to plot any point on the computer screen. There are actually three separate programs listed - one for the 64, another for the 128, Plus/4 and C16 and the third one for the Vic20. TEXT PLOT is a mega-LORES Base program that will plot points on a text screen. It will work on all PET/CBM machines with 22, 40 or 80 column screens. The MODS are some modules to go with the Hires Base programs. 3-GRAPH is a program that draws a three-dimensional graphic on the screen. There are two listings; one for the 128 and another for the Plus/4 and C16.

The magazine also has geoPaint graphics interspersed throughout

as well as a subscription form and back issue order section. There is also heaps of advertising for 64/128 products and mail order outlets.

Being used to RUN, GAZETTE, and even CN, it takes a little to get used to the style in which dieHard is written. But as far as the content is concerned there was heaps to interest me. Having only ever seen this one issue, I cannot compare the quality of other issues. It is said to have quite a large cult following in the States but I feel that it would not gain such popularity over here due to its style. But for those of you who want to know where to buy some hard to get hardware or software, there are heaps of advertisers in dieHard. Previous issues have included reviews of JiffyDOS, KeyDOS ROM, Partner 64 & 128, Shoot Em Up Construction Kit, Loadstar, Gateway, IconTroller and Test Drive II.

THE SPINNER is a companion disk which contains all the programs in the magazine plus others too large to include in the magazine. It is available separately or as a package with the Flyer.

dieHard is available from LynnCarthy Industries Inc, PO Box 392, BOISE, Idaho, 83701-0392 phone (208) 383 0300. Subscription rates for Australia and New Zealand are US\$3.95 per single issue and US\$24.97 per year (10 issues). Spinner disk costs US\$6.50 per single issue or US\$65.00 for a year. Special rates are available if you wish to subscribe to both the Flyer and the Spinner disk. Back issues of the magazine are available either by single issue or by yearly sets with prices varying from US\$2.95 to US\$3.50 per issue.

## CONTINUED FROM PAGE 28

### BLOCKS REQUIRED

I don't know how many times I've gone to save a file to disk, only to find out that there was insufficient space available. Now, there's no excuse. Just enter one of these command lines (depending on which computer/mode you using) and you will know just how much storage space that program in memory will take. Compare it with the amount of blocks free on your disk, and voila, you know whether there's room or if you will need another disk.

For the 64:

```
X = PEEK (45) + 256 * PEEK
(46) - 2049: PRINT INT
(X/254) + 1 "DISK BLOCKS
REQ'D"
```

And for 128 use:

```
GRAPHIC CLR: X = 58109 - FRE
(0): PRINT INT (X/254) + 1
"DISK BLOCKS REQ'D"
```

On the C64, X calculates the end of your BASIC program and subtracts the starting address (2049). The 128 version is a little easier to calculate since all bank 0 except 7427 bytes are available.



**Commodore**  
**NETWORK**  
April 1995





This month we have quite a number of interesting snippets for you. I am constantly on the lookout for hints, tips and short routines for inclusion in this column, so if you have a few favourites, please send them in for inclusion in a future column. For now, let's get on with the show!

### LAST FILE NAME

Looking for the name of the last file accessed? Well here's a quick and easy way to find out just what it was:

```
SYS 62913
```

This prints the name of the last file used to screen.

### USING DIFFERENT FILE TYPES

By saving a program to disk using the following procedure, your routine will be saved as a sequential file. This can be loaded and run just like any other program file with a slight alteration in the load command sequence as outlined below.

To save:

```
SAVE "PROGNAME,S",8
```

To load:

```
LOAD "PROGNAME,S",8
```

By this simple expedient, you can afford some small measure of security to your programs, since not many would think of loading and running a sequential file.

Interestingly enough, the same can be done utilising USR files by using the `SAVE "PROGNAME,U",8` command to save, and the `LOAD "PROGNAME,U",8` command to load. A simple loader routine can then be saved to disk to load in your program, with the core of your work left in its current format and inaccessible to the majority of users.

### CLOSING FILES

The much publicised `SYS 65511`

command, said to close all files, really does no such thing. What it does is cause the computer to forget that it has opened any files at all, and, in the process, forgets to inform any peripherals that opened files are to be closed. Here is a one liner that should prove an easy and effective way to close all those open files on disk in one go, regardless of what they are, or where and when they were opened.

```
X = PEEK (152): FOR J = 1 TO
X: CLOSE PEEK (601): NEXT
```

Just by way of explanation, location 152 contains the number of currently opened files, with the ten byte queue starting at 601 containing their file numbers, and working in a similar fashion to the keyboard buffer. As each file is closed, its entry is removed whilst the rest are moved down by one byte.

As an aside, issuing a `POKE 152,0` command will perform the same function as the `SYS 65511`.

### DATA ENTRY ABORT!

Have you ever gotten half-way through typing in a programline and found that what you've input so far is absolute rubbish! Well, here's an easy way to abort that line and begin afresh. Just press `<SHIFT><RETURN>` instead of the normal `<RETURN>`, and the computer moves the cursor to the next line without entering the current line in to memory.

### RESET

The following command, issued in either direct or program mode, will clear memory of any resident BASIC program and return the user to the Commodore's start-up screen. It will work on ANY Commodore 8-bit.

```
SYS PEEK (65532) + 256 * PEEK
(65533)
```

Substitute the `PRINT` command for the `SYS` if you wish to view the reset value pertinent to your particular machine.

### VERTICAL TABBING

OK, so neither the C64 or the C128 support a vertical tab command. That doesn't mean that you can't implement this on your machine! You can, on occasion, use `POKE 214, X` on a C64 or in 64 mode on your C128, or `POKE 235, X` in the 128's native mode. The value "X" should reflect the screen line number, minus one, that you wish to place the cursor on.

Be aware, though, that this is not 100% foolproof. You will need to take into consideration the cursor position at the time of execution, and the general design of your program to utilise this properly.

A `PRINT` command **MUST** follow either poke.

### 128 SLOW SCROLL

Ever listed a program to screen and seen it scroll by too fast to find what you want? Sure, you have the no-scroll key, but when you are busy taking notes, or performing some other task, you don't want to be constantly reaching for a key. With this tip, you can now have that program or directory listing scrolling by at a nice easy pace (about one tenth normal speed). This is very handy, especially in 80 column mode. To implement this slow-down, press the `ESCAPE` key, then the letter "A". To return your scroll speed to normal, just use the `ESCAPE` key followed by a "C".

### VERIFY

After saving a program to disk, try issuing the following command:

```
VERIFY "*",8
```

This verifies that the program you have just saved to disk is **EXACTLY** the same as you have in computer memory. By using the wild-card ("\*"), you force the computer to work with the last file saved or loaded. The only exception to this is when a drive is initialised, in which case the wild-card causes the first file in the directory to be accessed.

### HIGH-SPEED CURSOR

Here is a command string that will have your cursor moving at a much faster rate around that screen.

```
POKE 650,128: POKE 56325, 10
```

Location 650, when poked with the value 128, causes all keys to repeat. The actual speed of cursor movement can be altered by poking different values into location 56325. The lower the value used, the faster our cursor moves.

**CONTINUED ON PAGE 27**



## INTRODUCTION:

This is the first installment in a series of articles that we will try to arrange with some of the leading lights in the Commodore world, past and present. They will appear from time to time, as and when interviews can be arranged. This first installment, interviewing Jeff Minter, will run over several issues.

Jeff Minter is one of the most successful British games programmers. Through his family-run business, Llamasoft, such classics as "Gridrunner", "Attack Of The Mutant Camels", "Revenge Of The Mutant Camels", "Batalyx" and "Iridis Alpha" have enthralled gamers throughout the world, and earned Llamasoft a reputation for producing non-mainstream entertainment software. Although he's now working on software for the Atari Falcon computer and the 64-bit Atari Jaguar console, this previously unpublished interview held back in 1988 should be of interest to both Minter fans and anyone even remotely interested in the life of "lone-wolf" game programmers.

## EXPLANATION OF SOME TERMS USED-

**ELITE** - A classic space trading/fighting game of the early 1980's, represented by 3-D vector graphics.

**VIRUS** - The Amiga and ST incarnation of the Acorn Archimedes' blockbuster game "Zarch".

**ZARCH** - An amazing solid 3-D game written by David Braben, co-author of Elite. **PC ENGINE** - A cheap, technically brilliant datasette-sized home arcade game console from Japan.

**LIGHT SYNTHESISER (LIGHTSYNTH)** - A program that creates a visually soothing kaleidoscope effect on monitor screen. For example, "Psycadelia" on the C64.

**IMAGINE** - Was a large, popular English software company a few years ago that, among other things, publicised its programmers like movie stars. A typical day at Imagine Ltd involved fire extinguisher fights, driving around in the company Ferrari, burning large denomination banknotes, attending television and newspaper interviews, and sometimes even doing a bit of programming. Basically, it was just ONE BIG PARTY. When Imagine Ltd went broke in 1984, Ocean bought it's name for use as a label.

**SALAMANDER SOFTWARE** - An early English software house which catered mostly for the Dragon and Oric computers.

**ORIC** - Was a popular European 8-bit micro in the early 1980s.

**DRAGON** - An early computer that was compatible with the Tandy TRS-80 Color Computer.

**TONY CROWTHER** - The guy who wrote Blagger, Loco, Thing On A Spring, Gryphon, Bombuzal and a zillion other classic C64 games. Is one of Jeff's friends.

**SPECTRUM** - The dominant British home computer in the 1980s. Produced by Sinclair Research, it had a 4Mhz Z80 microprocessor but poor sound and limited graphics.

**MEGA 4** - The Top Of The Range Atari ST and contained 4Mb RAM.

## THE INTERVIEW-

At the arranged time I telephoned Jeff at his house deep in the Welsh countryside. Among his pets are two sheep, Molly and Flossy, which he'd just been feeding.

"Well, so I thought I had enough room here so I thought, 'Why not have a couple of sheep?'. They keep quite happy. They're definately pampered sheep, they're normally round here on little farms and they're sold to eat. It's not nice at all. I feed them on digestive biscuits and stuff, they love it.

"In my village there are five houses, and one of them's the pub. Yeah, and there's nothing else for a few miles."

"Just gunna get my pack, just a second...right, that's better, just had to

lunge to get my cigarettes. They're slightly out of reach. I've got a reasonably long phone extension, but not long enough. Right, that's it."

"I've just been trying Elite on the ST. It's pretty good, certainly better than it was on the Commodore. I never used to play it much on the Commodore because I could never persevere on it, but I'm getting on with it, and I'm gradually building up my ship. I just bought a docking computer which is well-good."

I asked him if he played many games now or if he spent most of his time programming

"Ah, I like to play a lot of games. I love Virus. You seen Virus? That is an EXCELLENT game, I love that.

"I play a few games on the ST although nothing really interests me as much as programming a new game. Ah, but mainly my games have been on the PC Engine. Have you heard about the PC Engine?

"I'm constantly amazed by the PC Engine. Have you ever seen one? It's really tiny. It's a tiny little machine and the cards I reckon must hold at least a megabyte of memory, little ROM cards that go into them. And the graphics are just astounding, I mean, R-Type, you cannot tell the difference between Arcade R-Type and PC Engine R-Type. It is that good, and it only costs seventy pounds in Japan, which is ABSURD. It's like twenty Commodore Sixty-Fours in a little box.

"I've got a friend who knows somebody in Japan and we import a load of stuff from there. We're gunna get the CD-ROM. There's a CD-ROM coming out soon and there's Space Harrier coming out at the end of this



month. We'll be getting Gauntlet and all sorts of goodies."

How did Jeff begin his programming career?

"Um, quite accidentally, I wandered into a room where there was somebody who was playing a game on the Commodore PET and I thought-

A) that they were playing a game and I was into Space Invaders at the time anyway so that was good and...

B) that they had programmed it themselves so I decided that I wanted to do some programming 'cause I wanted to make games up. So it was just like by accident, wandering into a room one day and finding somebody playing on a micro. I didn't realise that you could make video games for them at that time.

"Well, my early programming I did when I was still at college, I wasn't working for anybody. Later on I did a bit of freelance work for a firm in Great Yarmouth called DKTronics. I did some games for them on the Sinclair ZX-81. I can't remember that thing. I did a graphics ROM for them as well. Then I did a tape of ten Vic-20 games which were sort of half BASIC, very, you know, cross them off a couple of weeks sort of thing, er, then I set up Llamasoft 'cause I wasn't getting any good deals from these people, who kept ripping me off. So I then wrote my first Vic-20 game for Llamasoft, which was Andes Attack, or Defender as it was known then."

Was the name change due to trouble with Atari who owned the "Defender" home computer rights?

"We weren't hassled. Atari's lawyers didn't come up to us or anything like that but I figured it would probably be a good move because at the time Atari was getting heavy about the Defender name with everybody, they hadn't specifically come up to us and said, you know, "Change that.". In truth, Andes Attack on the Vic-20 was quite a long way from Defender because it didn't have a scanner and everything. It was very limited."

I then asked about the public lightshows he'd been holding at various venues.

"Oh well, you'd have to see that to appreciate it. Um, basically it's like a sort of super kaleidoscope, it's a lightshow program designed so you can do things in time to music. The most advanced system- I've been developing it for three or four years now. My current system for doing lightshows comprises FIVE Atari STs with a total of about eleven megabytes of call memory between them and a three megabyte online hard disk drive,

all running on the same monitor through a custom built video mixer so you get a lot of effects going on there.

What sort of TV standard are you on down there? You're on PAL, right, can you run British videos? Yeah, me and a friend have just made a video, for fifty minutes. It's like an album which we've composed and I worked on the lightshow simultaneously and we've released it on video.

So I could send you one of those out if you want to have a look at it.

"At the moment obviously when I'm working on stuff it just comes on the monitor screen. I have got a projection video system which can project a TV image eight feet big. I did a performance down in London in September and they hired out a fourteen feet video projector which is pretty good. Basically I can hook up to anything so if I go along to some venue and they've got a mega video projector I can just hook into that. It's the output on my video mixer, it's straight RGB, I can plug into just about any commercial projector around. There exists projectors which can be forty feet high. If you can find them. They're very expensive. Some of the big sports events have them, I've been looking for those, for example."

Could he describe his programming setup?

"I use Devpak 2, which is a good assembler for the ST, a Mega 4 for programming on and a 20 Meg hard disk drive. I believe in having a really good set of tools, I mean, if you're going to be working with a system for a long time, you don't want to get a cheapo system and have it running out of memory or the assembler crashing. It's important when you're working on something that you're comfortable with your work system."

Why the ST and not an Amiga or PC?

"It goes back a long way. It's basically 'cause in the days when the ST and Amiga were first coming out Commodore had this really shitty attitude to games programmers, it didn't want to know 'em 'cause they figured they were going to put the Amiga in as a business machine.

"So I was getting absolutely no help from Commodore, and at the same time Atari were being very, very helpful. I got one of the first Atari systems in the country and whenever I got problems I could ring them up, and I went out to shows in Germany and stuff with them. Basically, Atari seemed to be a lot more helpful to people who wanted to get into the machine early, which was what I

wanted to do, than Commodore did. So, constantly I went with Atari at an early stage and by the time the Amiga became more popular I already knew the Atari inside out and I know the ST like the back of my hand now. If I wanted to go through the effort of programming the Amiga I'd have to sort of learn the Amiga all over again. I'd rather concentrate on doing a lot of original stuff on the ST. They're both excellent machines."

And was the ST or Amiga winning the current 16-bit marketing war?

"At the moment I think ST marginally. Amiga's catching up. I don't think there's going to be an outright winner now, it's been going on for too long. I mean, for one or other to win outright it would have had to happen in the early days. The ST would have had to completely dominate, and the Amiga not to have had a look-in. I think now you're gonna end up with about half and half, people with STs, people with Amigas. There's certainly room out there anyway.

"There's enough life in the ST side of the market alone to sustain me. I'm doing stuff on the ST which is so far ahead of what's on the Commodore because you don't run out of sprites. You've got an unlimited amount of sprites. There's no hardware sprites, but if you write a good software sprite routine then you just don't run out of sprites, which is wonderful.

"I'm writing a game at the moment and the screen is just FILLED with explosions and stuff flying around, all happening really fast and it's horizontally scrolling. So you can do some serious stuff, even on the ST with no support hardware. Its processor's so damn POWERFUL and so damn FAST.

"EVERYTHING has to be done through software but with software there are no limitations if you want to do something and you can imagine how to program it. You never cop-out by saying that the hardware can't do that so I won't bother. You have to be a bit clever in the first place to get it going perhaps, but there are no limits. You can do what you want with it, it's a very direct sort of thing."

I next asked if Jeff had played the 16-bit game "Xenon", one of the first games to push the new machines?

"I know Xenon. Xenon is a very class game.

"If you want an example of like, amazing software which you could only do on a 16-Bit, which shouldn't be possible on a Commodore, check out Virus, 'cause it's outrageously good. It's got the sort of 3-D which



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you couldn't possibly do on a Commodore 64, you wouldn't be able to draw the screen, never mind calculate the 3-D, and it plays beautifully."

And did he have any plans for more C64 games?

"Not immediately, I've done two versions of the lightsynth but no games, so I'm currently doing a couple of games on the ST but I might after that. I'm gonna see how it goes. I need to get a couple out on the ST because people are saying, you know, I've been programming the ST for years and I haven't released any games for it, what about it? So I'm rectifying that first."

Was there a market for his Light Synthesizers?

"The life of something like a lightsynth is completely different from

the life of something like a game. You release a game, then you get like a huge initial load of sales then three months later it's dead, 'cause games die in about three months. Whereas we were still selling Colospace, which was the Mark One lightsynth, right up until the day we released Tripatron, which is the Mark Two, and I know that Tripatron will go on selling for about two, three years. It doesn't sell in huge volumes but it sells steadily for years, which makes it a nice little earner."

I next mentioned the recent negative magazine reviews of the ST version of one of his C64 games.

"Er, yeah, oh God, that was a mistake, er, well, it was a mistake to get it converted the way it happened. What happened was, I did Revenge Of The Mutant Camels 2. Have you seen that one on the Commodore? That has

been converted to the ST by Mastertronic and it took them FIVE months to convert ONE Commodore game to the ST. They used FIVE programmers, God knows why they needed so many, and they ended up with a game worse than the Commodore version. And I didn't even get a chance to look at it while it was in development, I found out about the conversion when I bought it in a shop. Which is pretty damn bad! I didn't get any chance to have any say in the conversion at all which is a real drag 'cause then the conversion comes out, isn't much good, and I get a lot of stick from the press because people think that I had something to do with it. But I didn't, so when you see it on the ST and it's a load of rubbish, DON'T BLAME ME."

- to be continued next month . . .



# Commodore Network Merchandising

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## NEW LINES!

We are pleased to announce the inclusion of several new lines to our MERCHANDISING department. Here is a rundown of each:

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Encouraged by the acceptance of our "CP/M Corner" column, and realising that one of the major problems faced by 128 users who choose to delve into the depths of CP/M is knowing where and how to acquire software, we have put together this massive collection of material covering some 30 X 1541 disk sides, or 8 X 1581 disks, and we've made it available for only \$40.00

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